10/538855

FIG.1

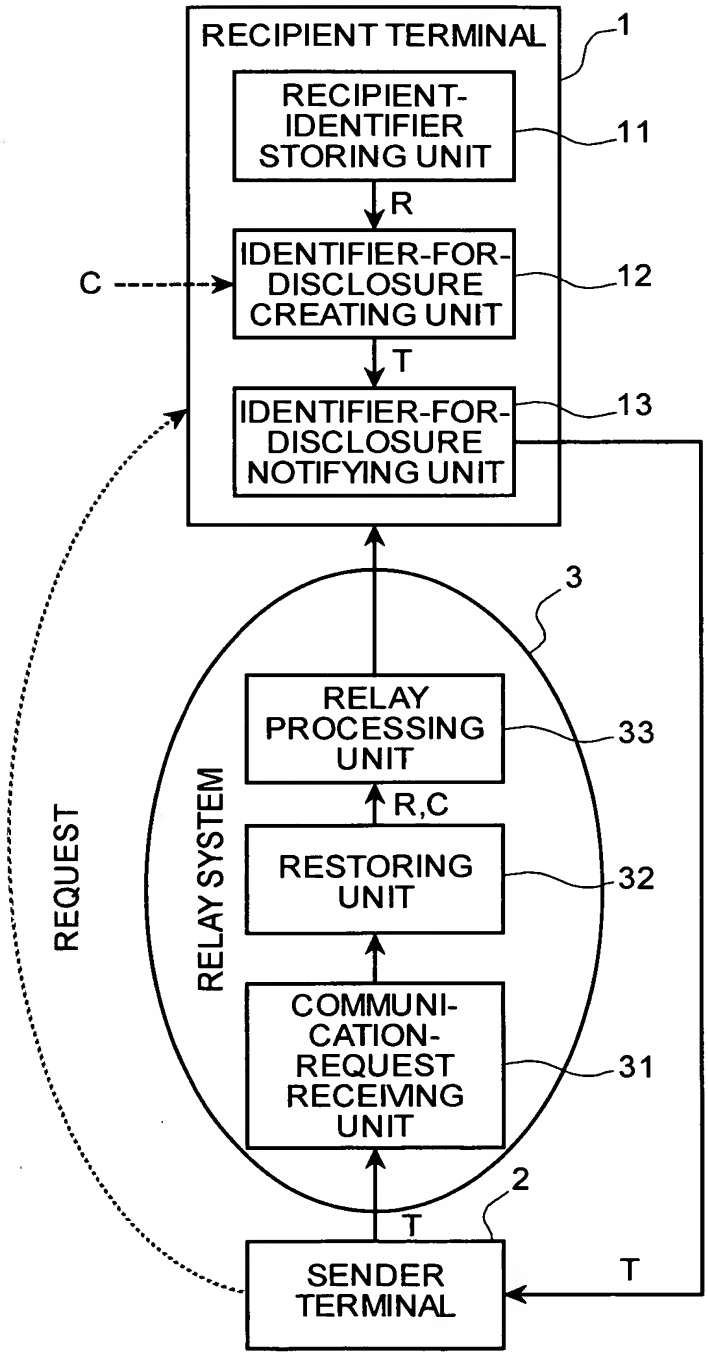

FIG.2

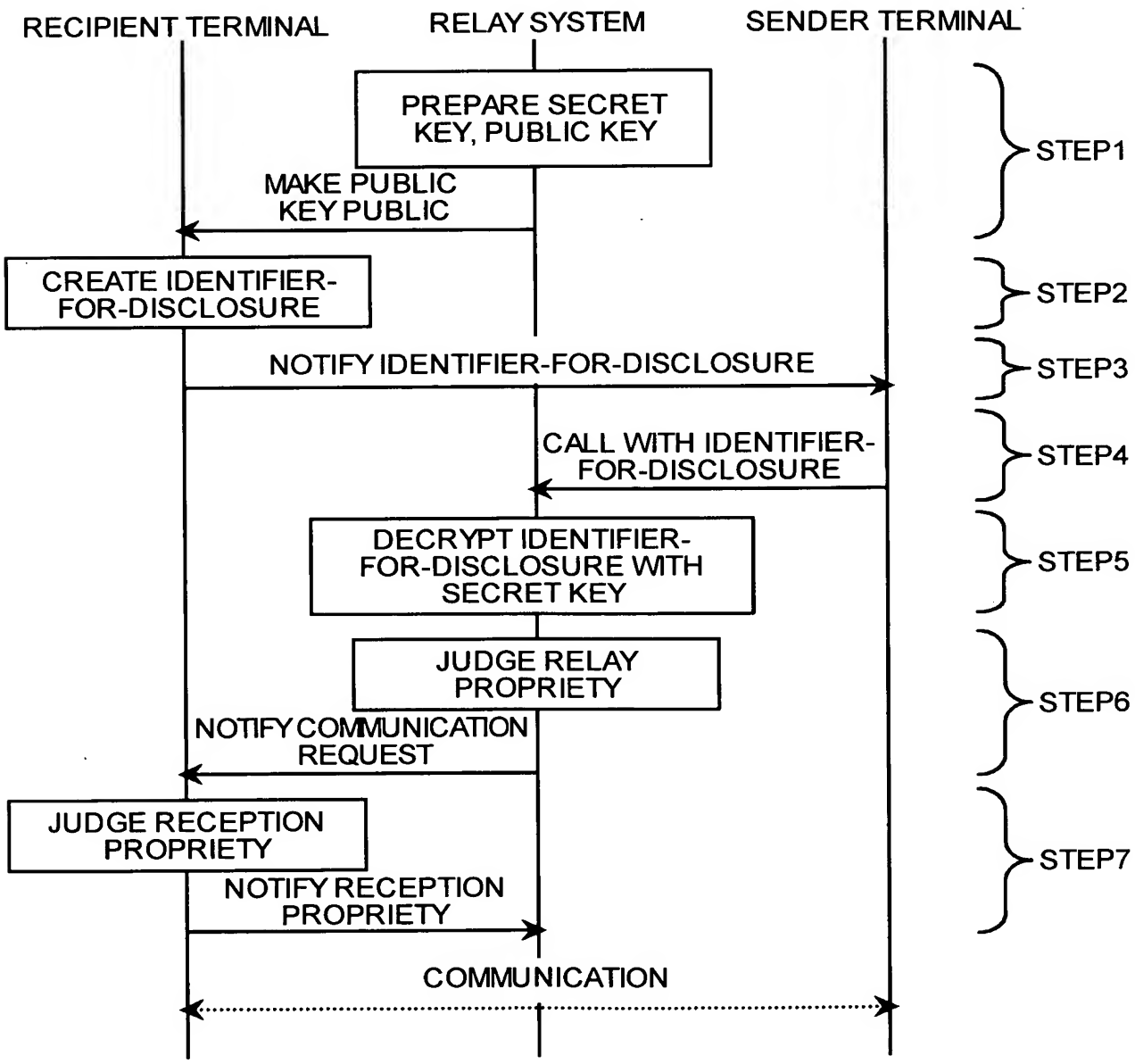
RECIPIENT TERMINAL
RELAY SYSTEM
SENDER TERMINAL
PREPARE SECRET KEY, PUBLIC KEY
MAKE PUBLIC KEY PUBLIC
CREATE IDENTIFIER-FOR-DISCLOSURE
NOTIFY IDENTIFIER-FOR-DISCLOSURE
CALL WITH IDENTIFIER-FOR-DISCLOSURE
DECRYPT IDENTIFIER-FOR-DISCLOSURE WITH SECRET KEY
JUDGE RELAY PROPRIETY
NOTIFY COMMUNICATION REQUEST
JUDGE RECEPTION PROPRIETY
NOTIFY RECEPTION PROPRIETY
COMMUNICATION
STEP1
STEP2
STEP3
STEP4
STEP5
STEP6
STEP7

FIG.3

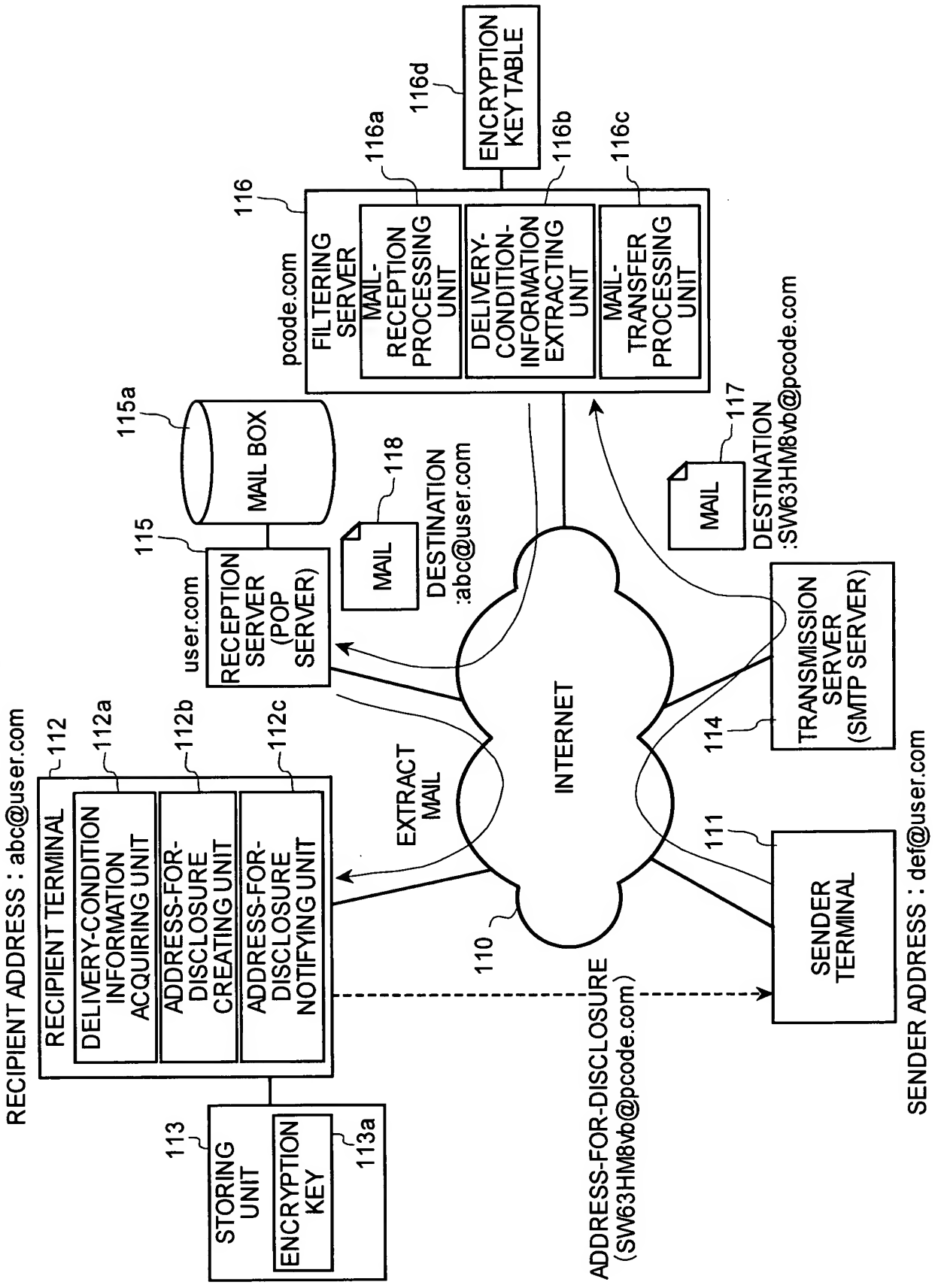
RECIPIENT ADDRESS : abc@user.com
RECIPIENT TERMINAL
112
DELIVERY-CONDITION INFORMATION ACQUIRING UNIT
112a
ADDRESS-FOR-DISCLOSURE CREATING UNIT
112b
ADDRESS-FOR-DISCLOSURE NOTIFYING UNIT
112c
STORING UNIT
113
ENCRYPTION KEY
113a
RECEPTION SERVER (POP SERVER)
user.com
115
MAIL BOX
115a
MAIL
118
DESTINATION :abc@user.com
FILTERING SERVER
pcode.com
116
MAIL-RECEPTION PROCESSING UNIT
116a
DELIVERY-CONDITION-INFORMATION EXTRACTING UNIT
116b
MAIL-TRANSFER PROCESSING UNIT
116c
ENCRYPTION KEY TABLE
116d
EXTRACT MAIL
INTERNET
110
ADDRESS-FOR-DISCLOSURE (SW63HM8vb@pcode.com)
TRANSMISSION SERVER (SMTP SERVER)
114
MAIL
117
DESTINATION :SW63HM8vb@pcode.com
SENDER TERMINAL
111
SENDER ADDRESS : def@user.com

FIG.4

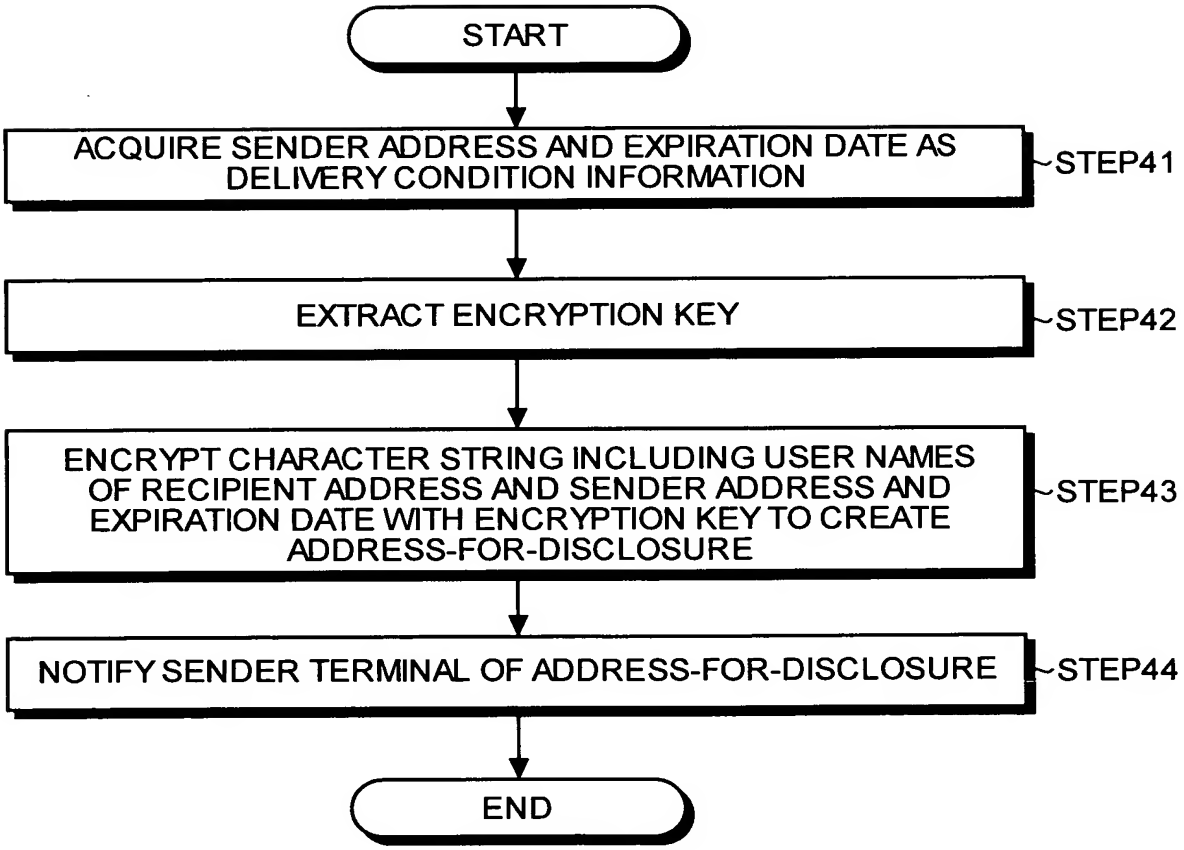
START
ACQUIRE SENDER ADDRESS AND EXPIRATION DATE AS DELIVERY CONDITION INFORMATION
STEP41
EXTRACT ENCRYPTION KEY
STEP42
ENCRYPT CHARACTER STRING INCLUDING USER NAMES OF RECIPIENT ADDRESS AND SENDER ADDRESS AND EXPIRATION DATE WITH ENCRYPTION KEY TO CREATE ADDRESS-FOR-DISCLOSURE
STEP43
NOTIFY SENDER TERMINAL OF ADDRESS-FOR-DISCLOSURE
STEP44
END

FIG.5

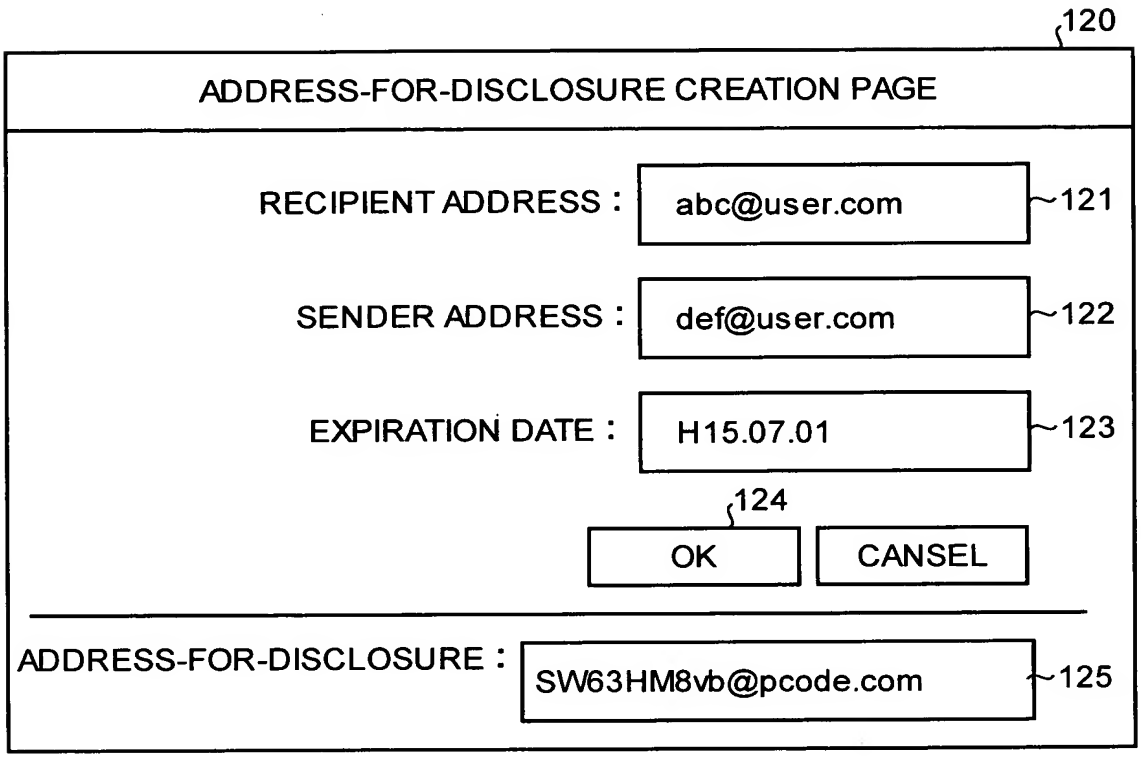
120
ADDRESS-FOR-DISCLOSURE CREATION PAGE
RECIPIENT ADDRESS :
abc@user.com
121
SENDER ADDRESS :
def@user.com
122
EXPIRATION DATE :
H15.07.01
123
124
OK
CANSEL
ADDRESS-FOR-DISCLOSURE :
SW63HM8vb@pcode.com
125

FIG.6

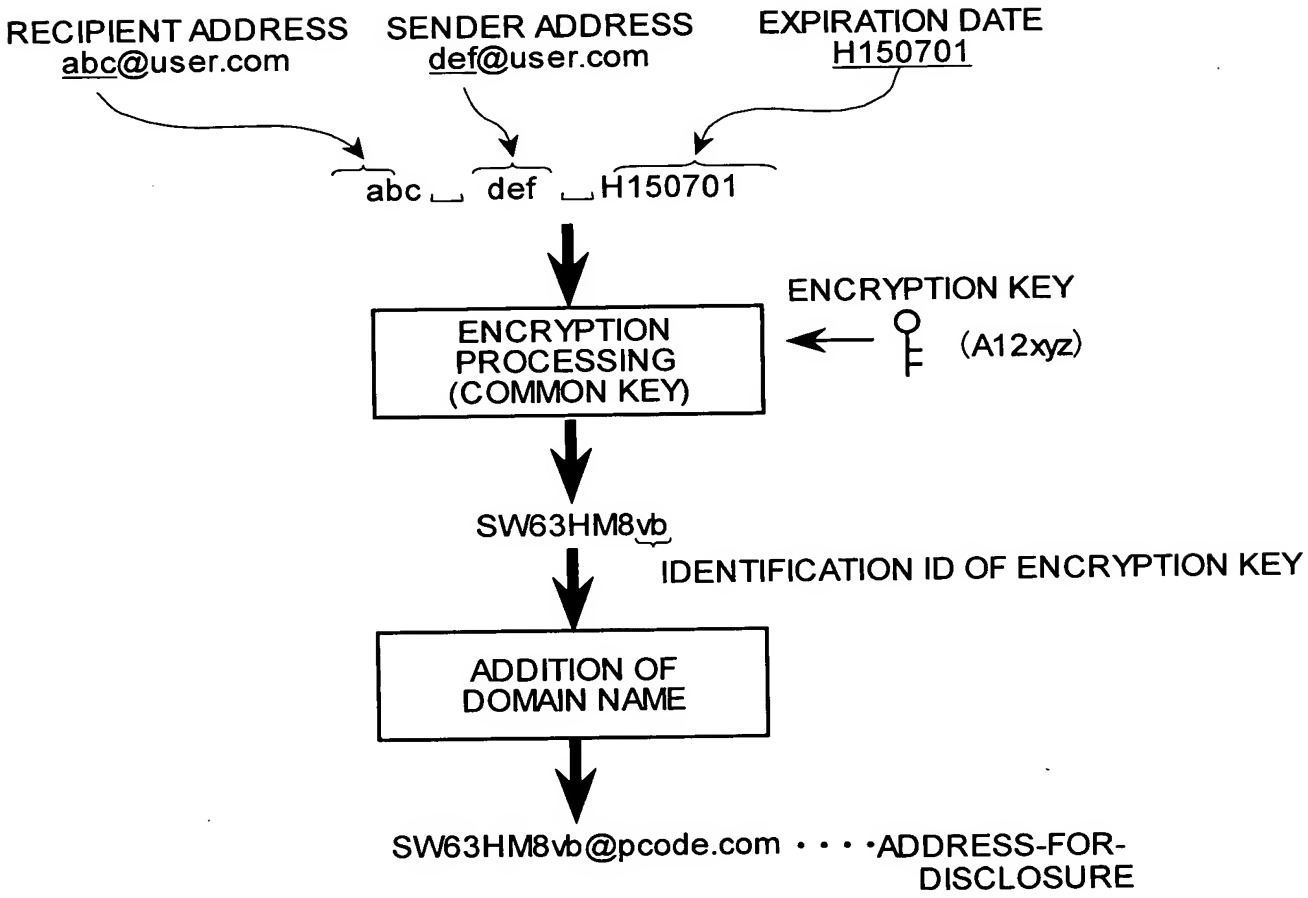
RECIPIENT ADDRESS
abc@user.com
SENDER ADDRESS
def@user.com
EXPIRATION DATE
H150701
abc def H150701
ENCRYPTION KEY
(A12xyz)
ENCRYPTION PROCESSING (COMMON KEY)
SW63HM8vb
IDENTIFICATION ID OF ENCRYPTION KEY
ADDITION OF DOMAIN NAME
SW63HM8vb@pcode.com
ADDRESS-FOR-DISCLOSURE

FIG.7

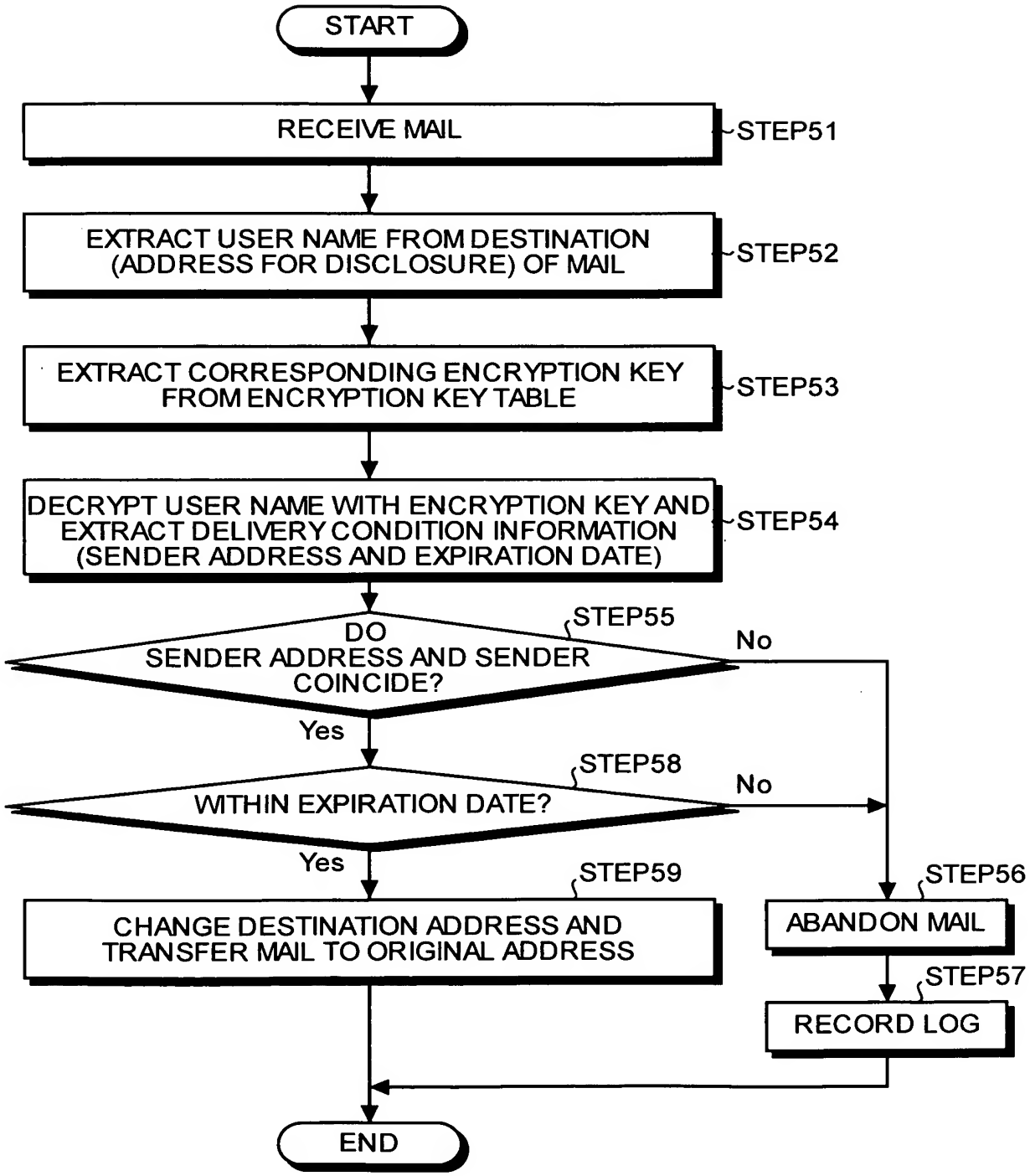
START
RECEIVE MAIL
STEP51
EXTRACT USER NAME FROM DESTINATION (ADDRESS FOR DISCLOSURE) OF MAIL
STEP52
EXTRACT CORRESPONDING ENCRYPTION KEY FROM ENCRYPTION KEY TABLE
STEP53
DECRYPT USER NAME WITH ENCRYPTION KEY AND EXTRACT DELIVERY CONDITION INFORMATION (SENDER ADDRESS AND EXPIRATION DATE)
STEP54
DO SENDER ADDRESS AND SENDER COINCIDE?
STEP55
No
Yes
WITHIN EXPIRATION DATE?
STEP58
No
Yes
CHANGE DESTINATION ADDRESS AND TRANSFER MAIL TO ORIGINAL ADDRESS
STEP59
ABANDON MAIL
STEP56
RECORD LOG
STEP57
END

FIG.8

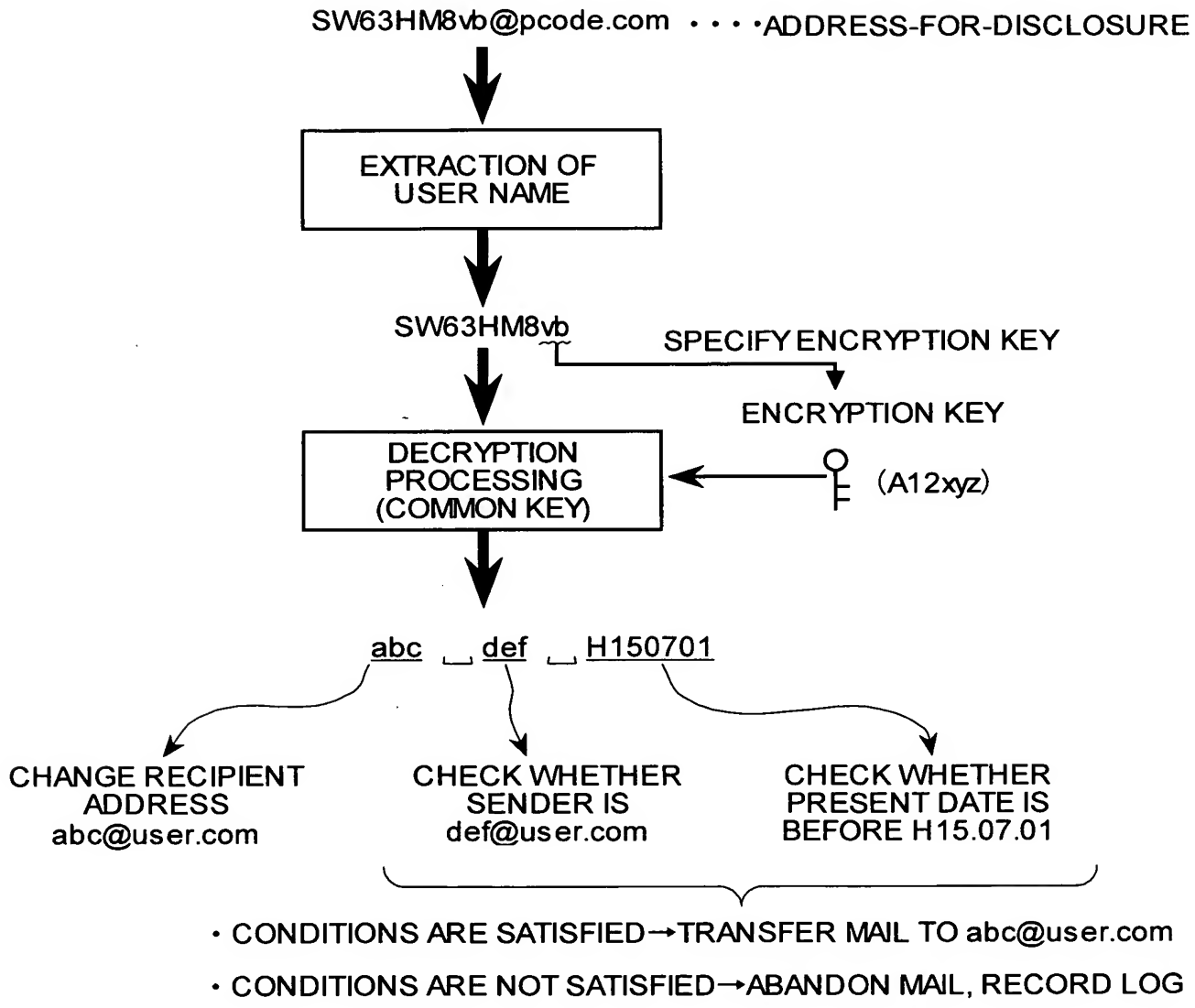
SW63HM8vb@pcode.com • • • •ADDRESS-FOR-DISCLOSURE
EXTRACTION OF USER NAME
SW63HM8vb
SPECIFY ENCRYPTION KEY
ENCRYPTION KEY
DECRYPTION PROCESSING (COMMON KEY)
(A12xyz)
abc _ def _ H150701
CHANGE RECIPIENT ADDRESS abc@user.com
CHECK WHETHER SENDER IS def@user.com
CHECK WHETHER PRESENT DATE IS BEFORE H15.07.01
• CONDITIONS ARE SATISFIED→TRANSFER MAIL TO abc@user.com
• CONDITIONS ARE NOT SATISFIED→ABANDON MAIL, RECORD LOG

FIG.9

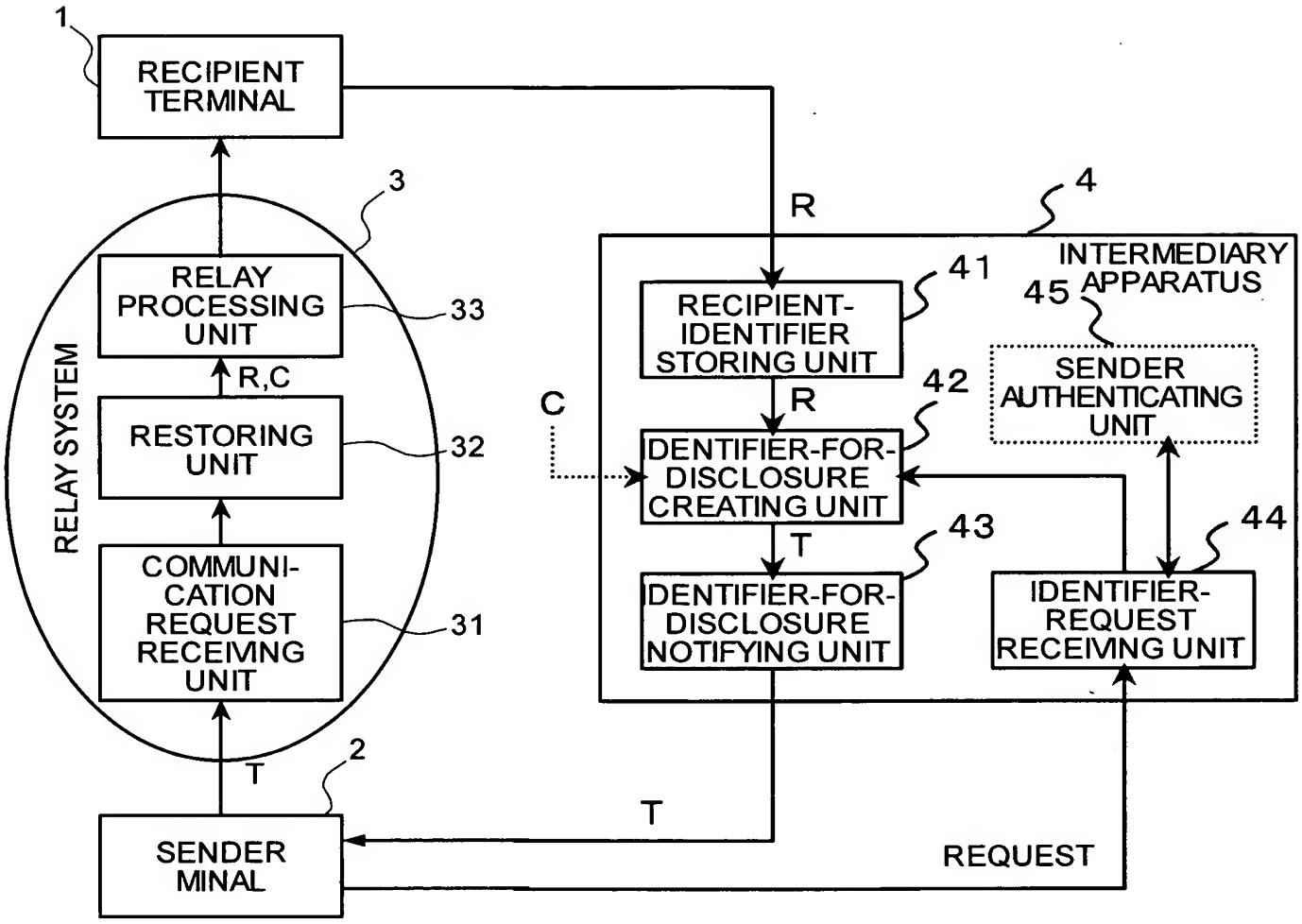
1
RECIPIENT TERMINAL
3
RELAY SYSTEM
RELAY PROCESSING UNIT
33
R,C
RESTORING UNIT
32
COMMUNI-CATION REQUEST RECEIVING UNIT
31
T
2
SENDER MINAL
R
4
INTERMEDIARY APPARATUS
41
RECIPIENT-IDENTIFIER STORING UNIT
45
SENDER AUTHENTICATING UNIT
C
R
42
DENTIFIER-FOR-DISCLOSURE CREATING UNIT
T
43
DENTIFIER-FOR-DISCLOSURE NOTIFYING UNIT
44
IDENTIFIER-REQUEST RECEIVING UNIT
T
REQUEST

FIG.10

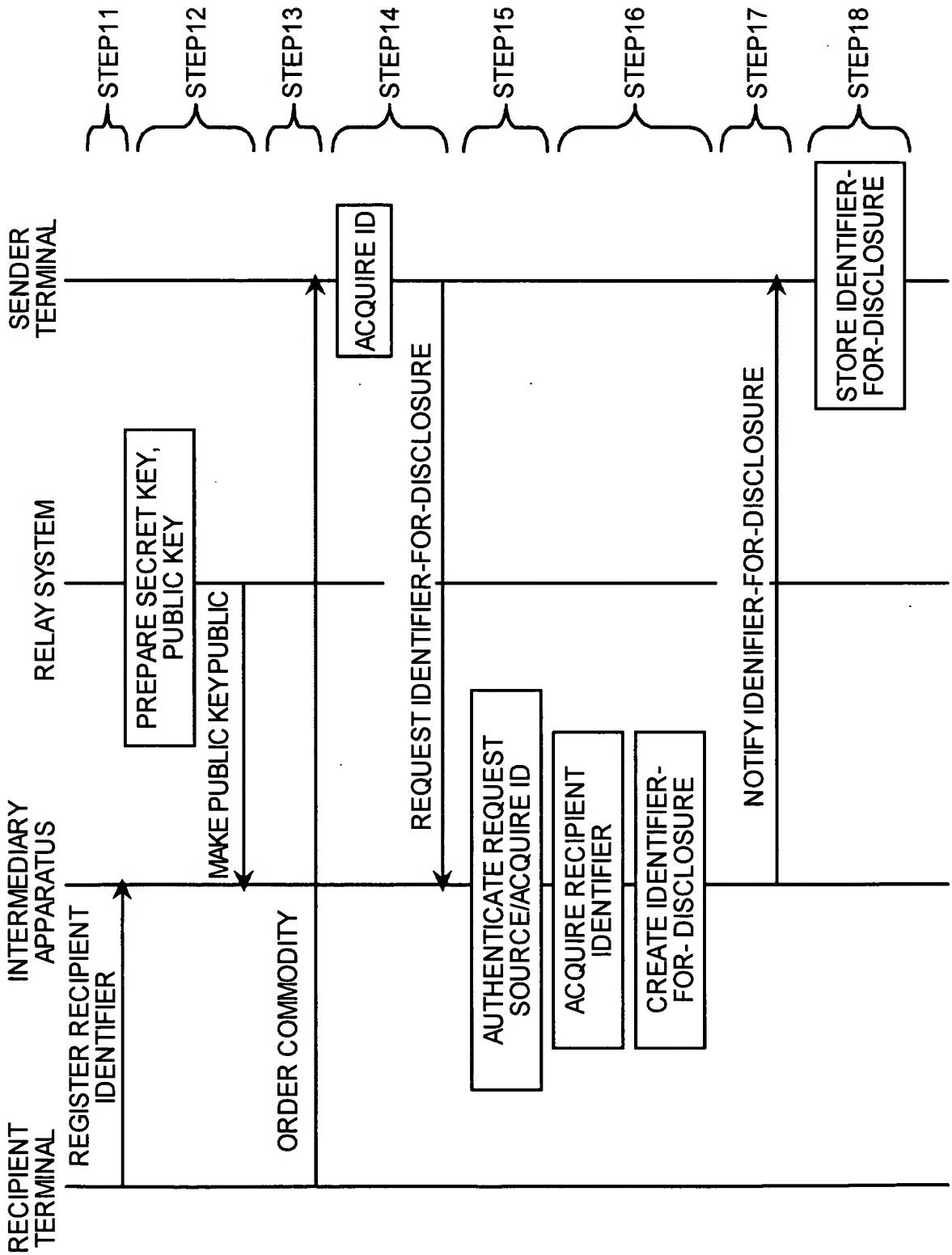
STEP11
STEP12
STEP13
STEP14
STEP15
STEP16
STEP17
STEP18
SENDER TERMINAL
RELAY SYSTEM
INTERMEDIARY APPARATUS
RECIPIENT TERMINAL
ACQUIRE ID
PREPARE SECRET KEY, PUBLIC KEY
MAKE PUBLIC KEY PUBLIC
REQUEST IDENTIFIER-FOR-DISCLOSURE
NOTIFY IDENIFIER-FOR-DISCLOSURE
STORE IDENTIFIER-FOR-DISCLOSURE
REGISTER RECIPIENT IDENTIFIER
ORDER COMMODITY
AUTHENTICATE REQUEST SOURCE/ACQUIRE ID
ACQUIRE RECIPIENT IDENTIFIER
CREATE IDENTIFIER-FOR- DISCLOSURE

FIG.11

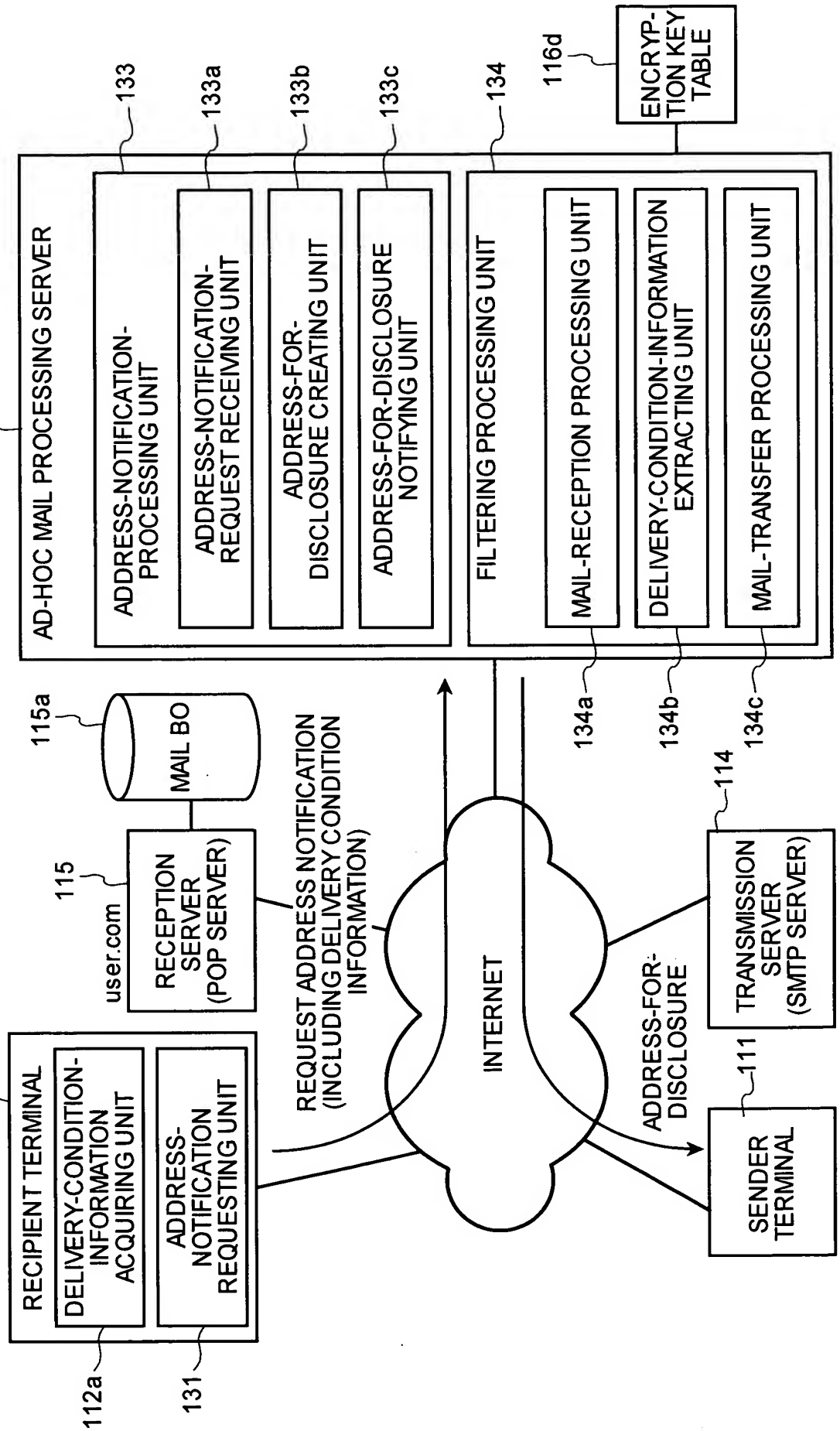
132
AD-HOC MAIL PROCESSING SERVER
133
ADDRESS-NOTIFICATION-PROCESSING UNIT
133a
ADDRESS-NOTIFICATION-REQUEST RECEIVING UNIT
133b
ADDRESS-FOR-DISCLOSURE CREATING UNIT
133c
ADDRESS-FOR-DISCLOSURE NOTIFYING UNIT
134
FILTERING PROCESSING UNIT
116d
ENCRYPTION KEY TABLE
134a
MAIL-RECEPTION PROCESSING UNIT
134b
DELIVERY-CONDITION-INFORMATION EXTRACTING UNIT
134c
MAIL-TRANSFER PROCESSING UNIT
115a
MAIL BO
115
user.com
RECEPTION SERVER (POP SERVER)
REQUEST ADDRESS NOTIFICATION (INCLUDING DELIVERY CONDITION INFORMATION)
INTERNET
114
TRANSMISSION SERVER (SMTP SERVER)
ADDRESS-FOR-DISCLOSURE
111
SENDER TERMINAL
130
RECIPIENT TERMINAL
DELIVERY-CONDITION-INFORMATION ACQUIRING UNIT
ADDRESS-NOTIFICATION REQUESTING UNIT
112a
131

FIG.12

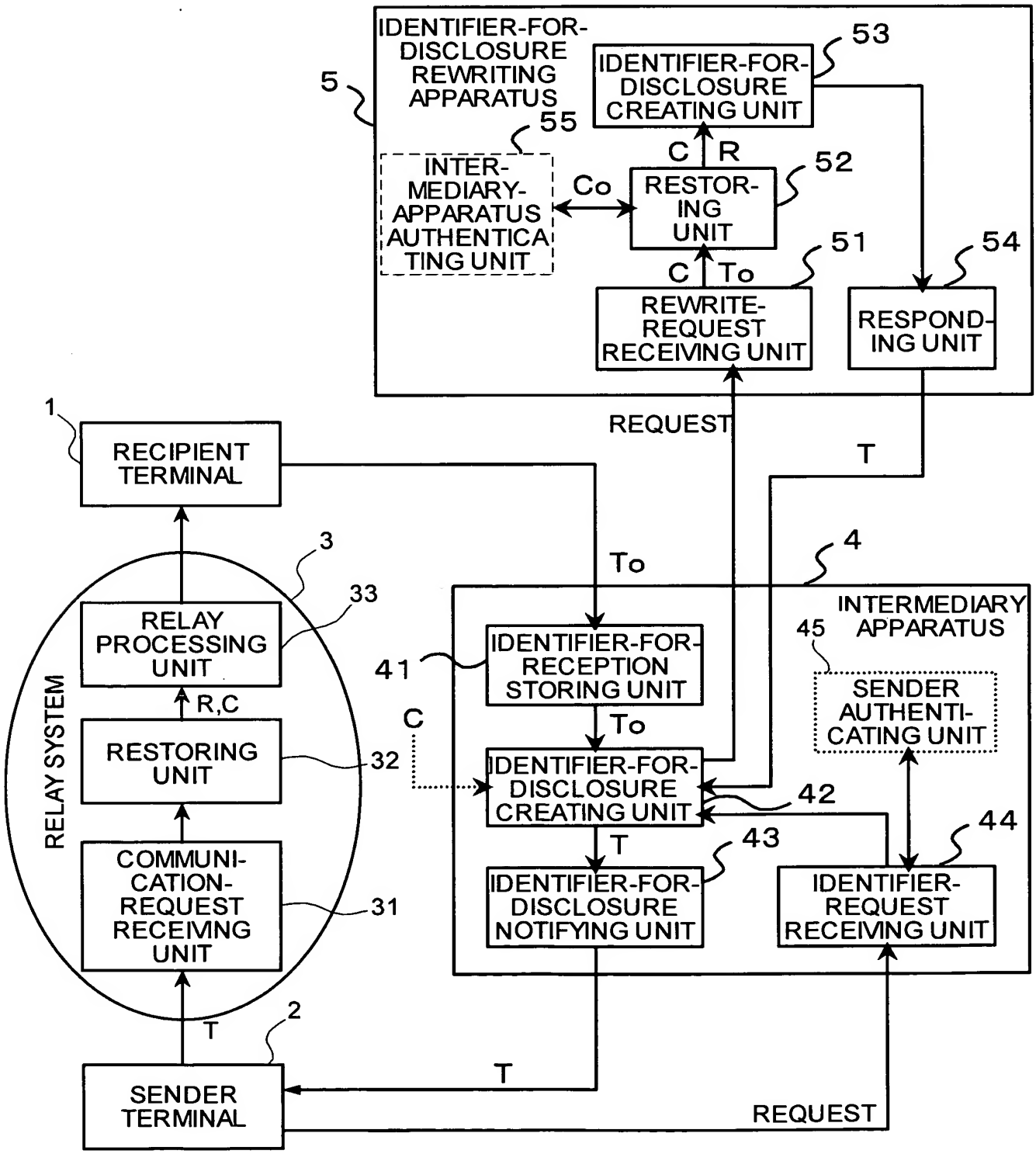
IDENTIFIER-FOR-DISCLOSURE REWRITING APPARATUS
5
IDENTIFIER-FOR-DISCLOSURE CREATING UNIT
53
55
INTER-MEDIARY-APPARATUS AUTHENTICATING UNIT
Co
RESTOR-ING UNIT
52
C
R
C
To
51
REWRITE-REQUEST RECEIVING UNIT
54
RESPOND-ING UNIT
REQUEST
T
1
RECIPIENT TERMINAL
To
4
3
33
RELAY PROCESSING UNIT
R,C
RESTORING UNIT
32
COMMUNI-CATION-REQUEST RECEIVING UNIT
31
RELAY SYSTEM
41
IDENTIFIER-FOR-RECEPTION STORING UNIT
C
To
IDENTIFIER-FOR-DISCLOSURE CREATING UNIT
42
T
43
IDENTIFIER-FOR-DISCLOSURE NOTIFYING UNIT
INTERMEDIARY APPARATUS
45
SENDER AUTHENTI-CATING UNIT
44
IDENTIFIER-REQUEST RECEIVING UNIT
T
2
SENDER TERMINAL
T
REQUEST

FIG.13

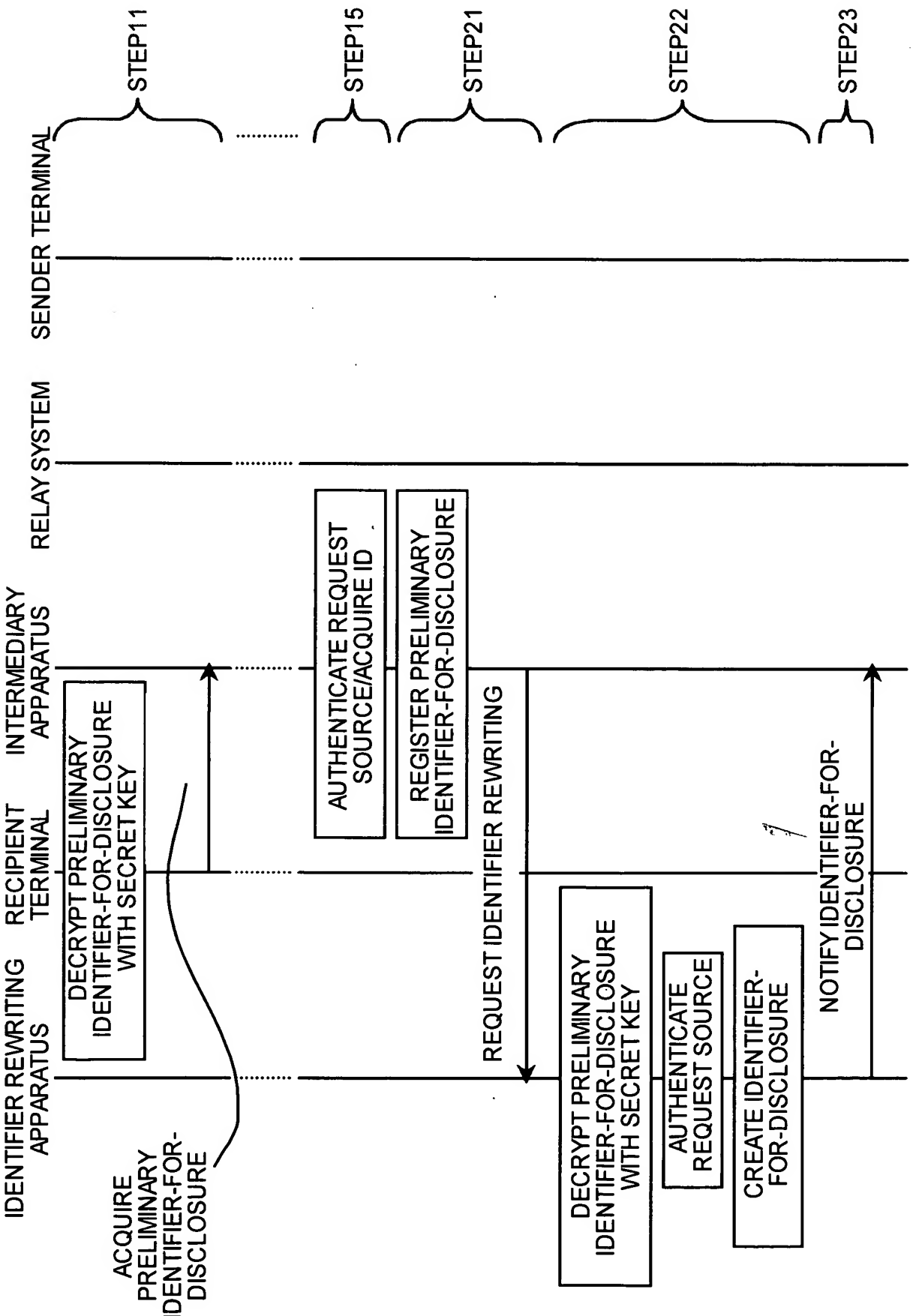
SENDER TERMINAL
RELAY SYSTEM
INTERMEDIARY APPARATUS
RECIPIENT TERMINAL
IDENTIFIER REWRITING APPARATUS
STEP11
STEP15
STEP21
STEP22
STEP23
DECRYPT PRELIMINARY IDENTIFIER-FOR-DISCLOSURE WITH SECRET KEY
AUTHENTICATE REQUEST SOURCE/ACQUIRE ID
REGISTER PRELIMINARY IDENTIFIER-FOR-DISCLOSURE
REQUEST IDENTIFIER REWRITING
ACQUIRE PRELIMINARY IDENTIFIER-FOR-DISCLOSURE
DECRYPT PRELIMINARY IDENTIFIER-FOR-DISCLOSURE WITH SECRET KEY
AUTHENTICATE REQUEST SOURCE
CREATE IDENTIFIER-FOR-DISCLOSURE
NOTIFY IDENTIFIER-FOR-DISCLOSURE

FIG.14

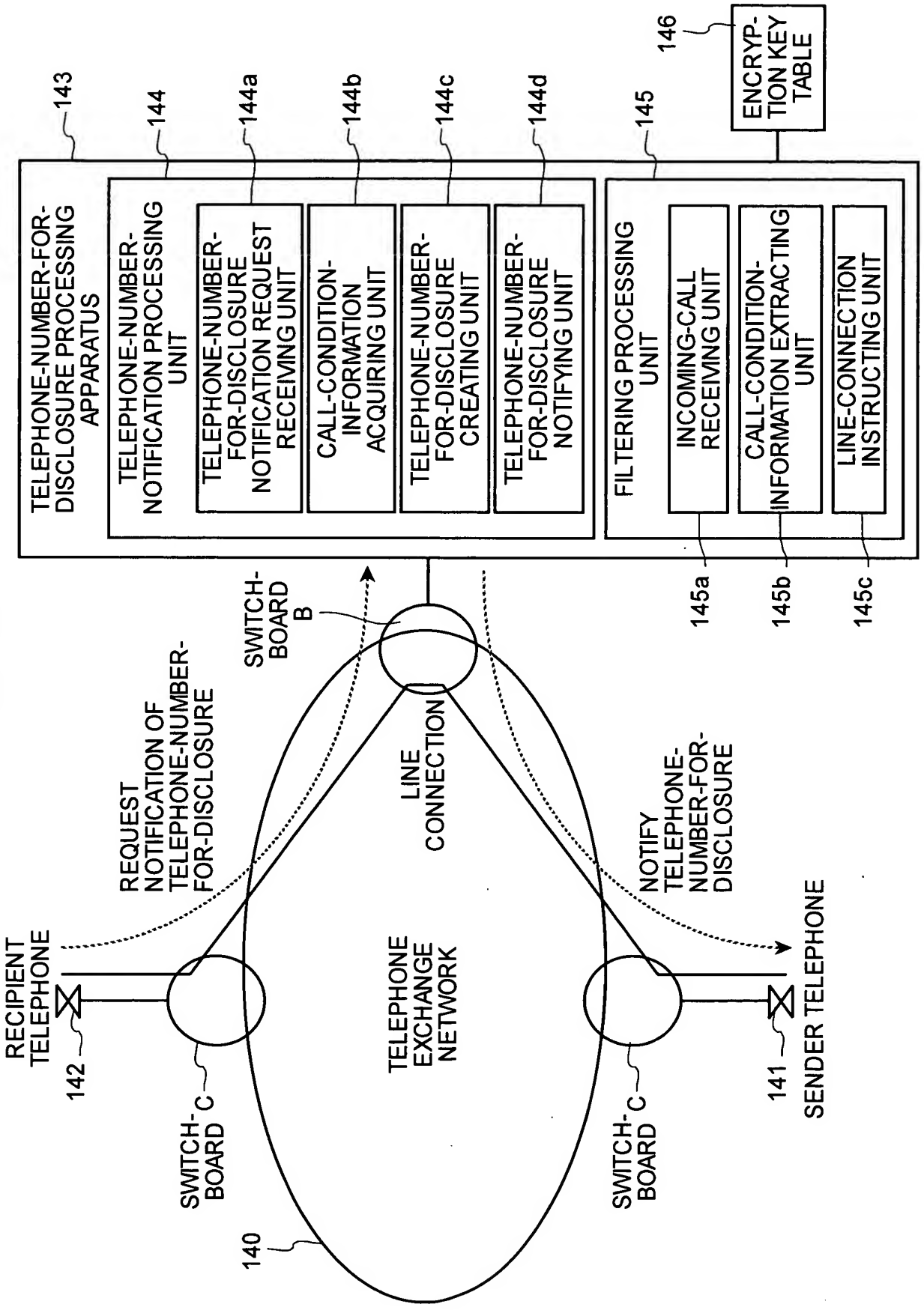
TELEPHONE-NUMBER-FOR-DISCLOSURE PROCESSING APPARATUS
143
TELEPHONE-NUMBER-NOTIFICATION PROCESSING UNIT
144
TELEPHONE-NUMBER-FOR-DISCLOSURE NOTIFICATION REQUEST RECEIVING UNIT
144a
CALL-CONDITION-INFORMATION ACQUIRING UNIT
144b
TELEPHONE-NUMBER-FOR-DISCLOSURE CREATING UNIT
144c
TELEPHONE-NUMBER-FOR-DISCLOSURE NOTIFYING UNIT
144d
FILTERING PROCESSING UNIT
145
INCOMING-CALL RECEIVING UNIT
145a
CALL-CONDITION-INFORMATION EXTRACTING UNIT
145b
LINE-CONNECTION INSTRUCTING UNIT
145c
ENCRYPTION KEY TABLE
146
SWITCH-BOARD B
REQUEST NOTIFICATION OF TELEPHONE-NUMBER-FOR-DISCLOSURE
LINE CONNECTION
NOTIFY TELEPHONE-NUMBER-FOR-DISCLOSURE
RECIPIENT TELEPHONE
142
SWITCH-BOARD C
TELEPHONE EXCHANGE NETWORK
140
SWITCH-BOARD C
141
SENDER TELEPHONE

FIG.15

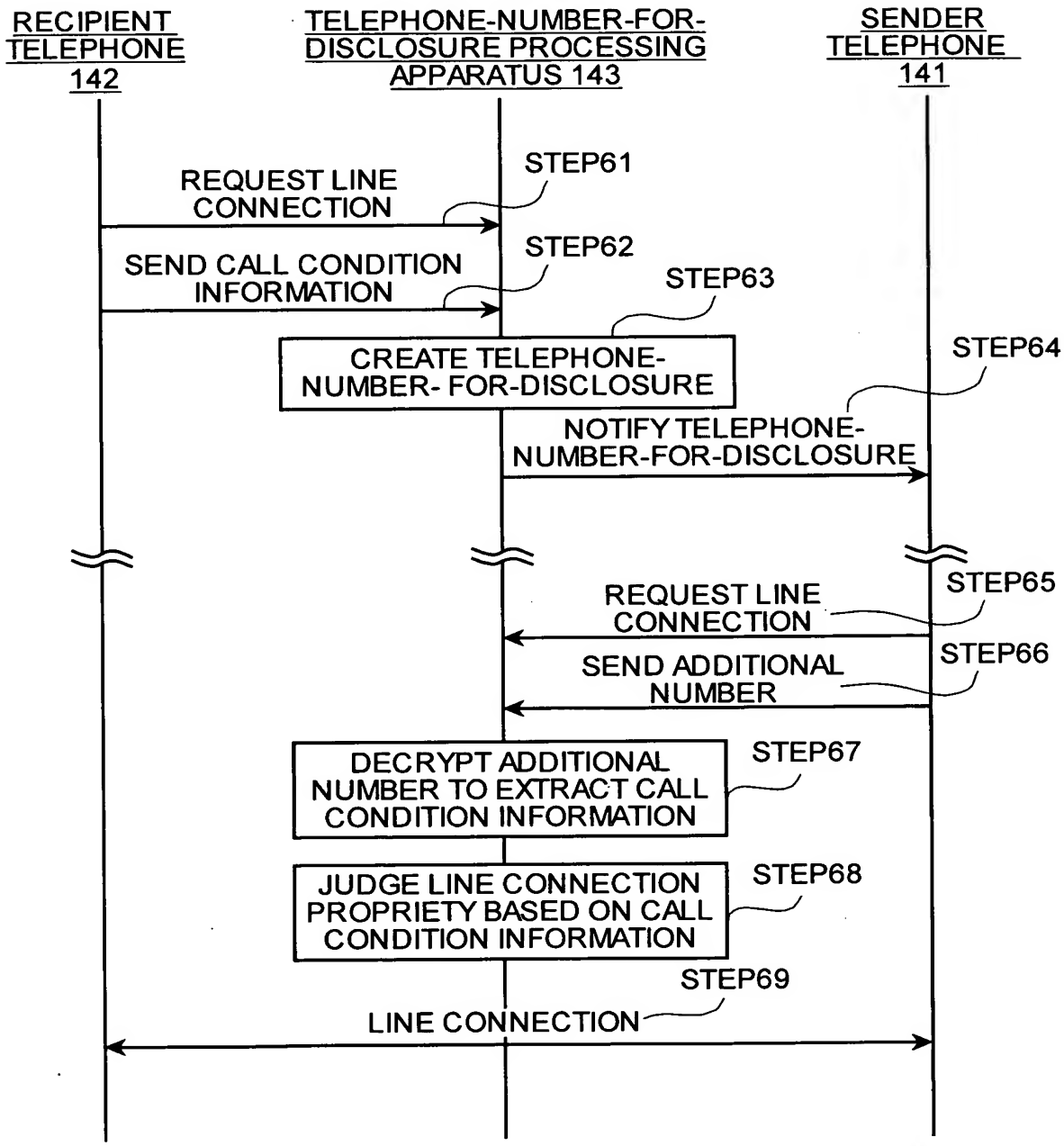
RECIPIENT TELEPHONE 142
TELEPHONE-NUMBER-FOR-DISCLOSURE PROCESSING APPARATUS 143
SENDER TELEPHONE 141
STEP61
REQUEST LINE CONNECTION
STEP62
SEND CALL CONDITION INFORMATION
STEP63
CREATE TELEPHONE-NUMBER- FOR-DISCLOSURE
STEP64
NOTIFY TELEPHONE-NUMBER-FOR-DISCLOSURE
STEP65
REQUEST LINE CONNECTION
STEP66
SEND ADDITIONAL NUMBER
STEP67
DECRYPT ADDITIONAL NUMBER TO EXTRACT CALL CONDITION INFORMATION
STEP68
JUDGE LINE CONNECTION PROPRIETY BASED ON CALL CONDITION INFORMATION
STEP69
LINE CONNECTION

FIG.16

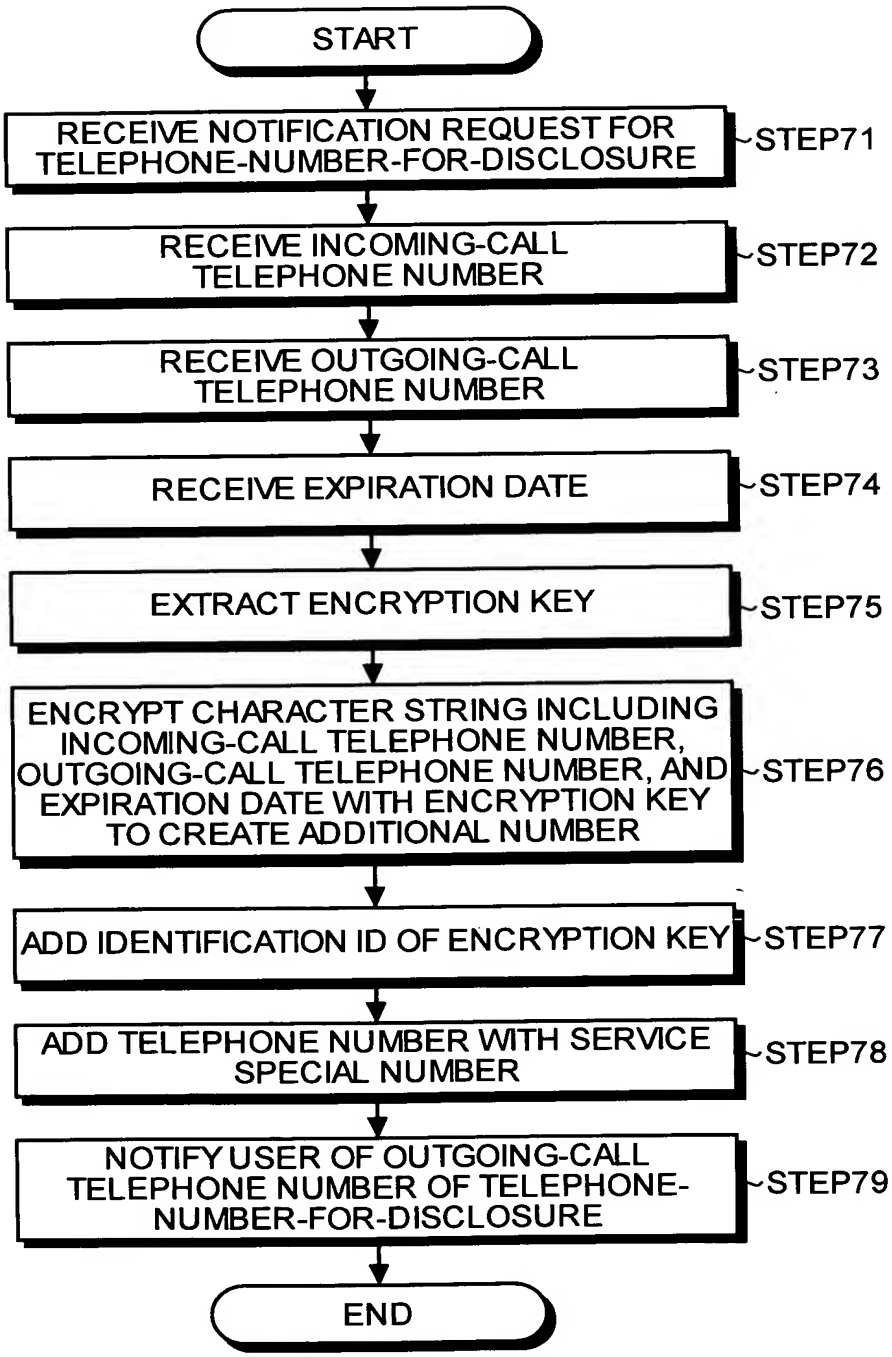
START
RECEIVE NOTIFICATION REQUEST FOR TELEPHONE-NUMBER-FOR-DISCLOSURE
STEP71
RECEIVE INCOMING-CALL TELEPHONE NUMBER
STEP72
RECEIVE OUTGOING-CALL TELEPHONE NUMBER
STEP73
RECEIVE EXPIRATION DATE
STEP74
EXTRACT ENCRYPTION KEY
STEP75
ENCRYPT CHARACTER STRING INCLUDING INCOMING-CALL TELEPHONE NUMBER, OUTGOING-CALL TELEPHONE NUMBER, AND EXPIRATION DATE WITH ENCRYPTION KEY TO CREATE ADDITIONAL NUMBER
STEP76
ADD IDENTIFICATION ID OF ENCRYPTION KEY
STEP77
ADD TELEPHONE NUMBER WITH SERVICE SPECIAL NUMBER
STEP78
NOTIFY USER OF OUTGOING-CALL TELEPHONE NUMBER OF TELEPHONE-NUMBER-FOR-DISCLOSURE
STEP79
END

FIG.17

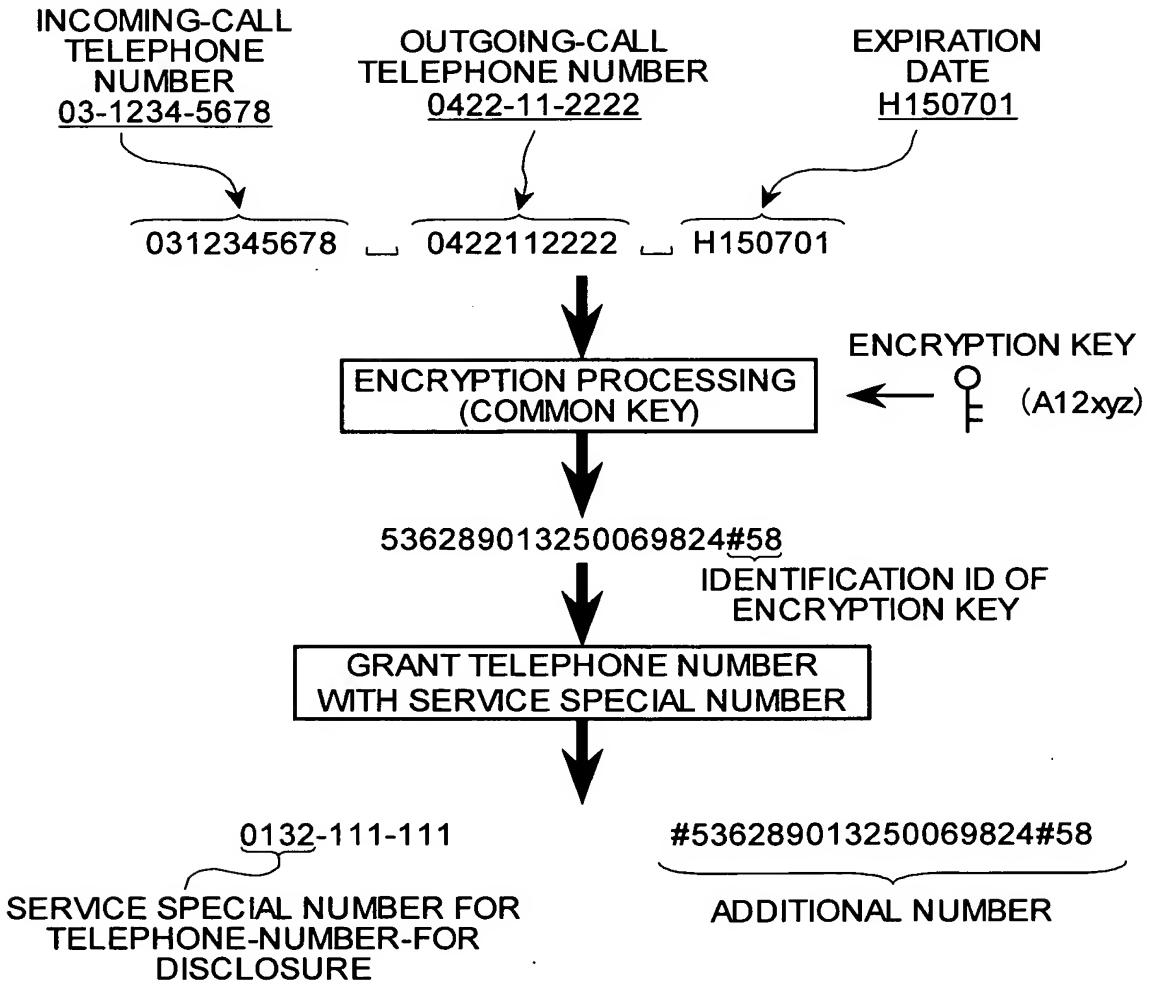
INCOMING-CALL TELEPHONE NUMBER 03-1234-5678
OUTGOING-CALL TELEPHONE NUMBER 0422-11-2222
EXPIRATION DATE H150701
0312345678 ␣ 0422112222 ␣ H150701
ENCRYPTION PROCESSING (COMMON KEY)
ENCRYPTION KEY
(A12xyz)
536289013250069824#58
IDENTIFICATION ID OF ENCRYPTION KEY
GRANT TELEPHONE NUMBER WITH SERVICE SPECIAL NUMBER
0132-111-111
SERVICE SPECIAL NUMBER FOR TELEPHONE-NUMBER-FOR DISCLOSURE
#536289013250069824#58
ADDITIONAL NUMBER

FIG.18

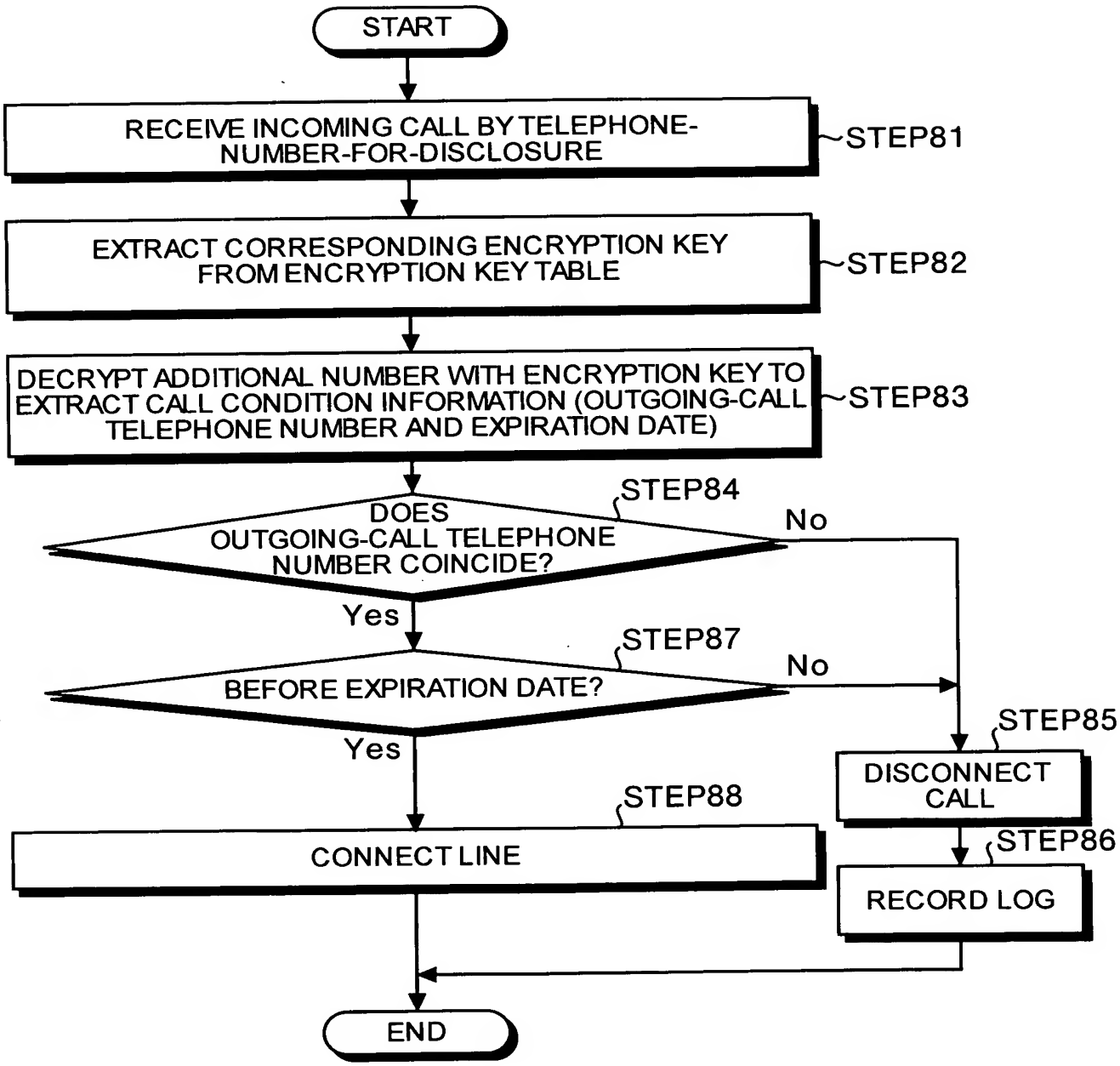
START
RECEIVE INCOMING CALL BY TELEPHONE-NUMBER-FOR-DISCLOSURE
STEP81
EXTRACT CORRESPONDING ENCRYPTION KEY FROM ENCRYPTION KEY TABLE
STEP82
DECRYPT ADDITIONAL NUMBER WITH ENCRYPTION KEY TO EXTRACT CALL CONDITION INFORMATION (OUTGOING-CALL TELEPHONE NUMBER AND EXPIRATION DATE)
STEP83
STEP84
DOES OUTGOING-CALL TELEPHONE NUMBER COINCIDE?
No
Yes
STEP87
BEFORE EXPIRATION DATE?
No
Yes
STEP85
DISCONNECT CALL
STEP88
CONNECT LINE
STEP86
RECORD LOG
END

FIG.19

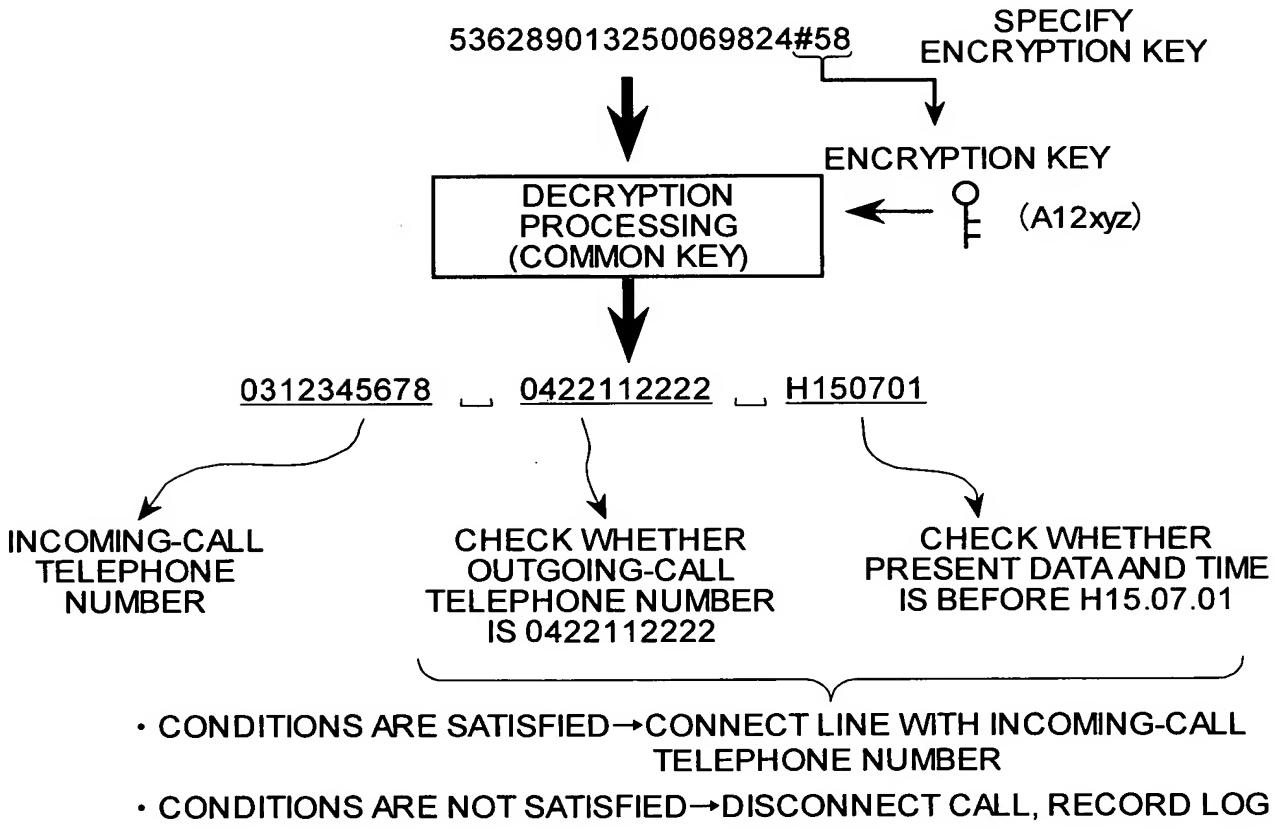
53628901325006982 4#58
SPECIFY ENCRYPTION KEY
ENCRYPTION KEY
(A12xyz)
DECRYPTION PROCESSING (COMMON KEY)
0312345678 ␣ 0422112222 ␣ H150701
INCOMING-CALL TELEPHONE NUMBER
CHECK WHETHER OUTGOING-CALL TELEPHONE NUMBER IS 0422112222
CHECK WHETHER PRESENT DATA AND TIME IS BEFORE H15.07.01
• CONDITIONS ARE SATISFIED→CONNECT LINE WITH INCOMING-CALL TELEPHONE NUMBER
• CONDITIONS ARE NOT SATISFIED→DISCONNECT CALL, RECORD LOG

FIG.20

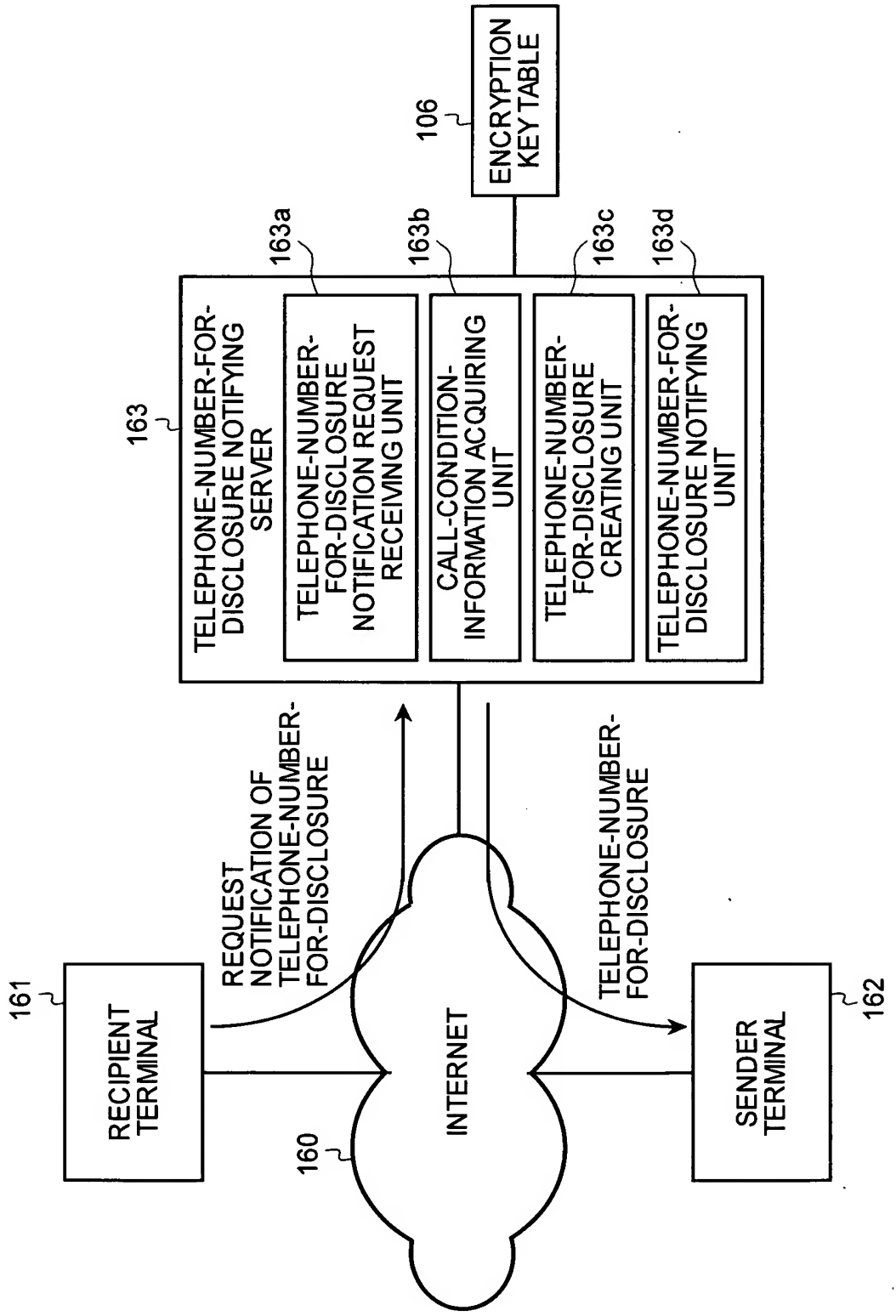
ENCRYPTION KEY TABLE
106
TELEPHONE-NUMBER-FOR-DISCLOSURE NOTIFYING SERVER
163
TELEPHONE-NUMBER-FOR-DISCLOSURE NOTIFICATION REQUEST RECEIVING UNIT
163a
CALL-CONDITION-INFORMATION ACQUIRING UNIT
163b
TELEPHONE-NUMBER-FOR-DISCLOSURE CREATING UNIT
163c
TELEPHONE-NUMBER-FOR-DISCLOSURE NOTIFYING UNIT
163d
REQUEST NOTIFICATION OF TELEPHONE-NUMBER-FOR-DISCLOSURE
TELEPHONE-NUMBER-FOR-DISCLOSURE
RECIPIENT TERMINAL
161
INTERNET
160
SENDER TERMINAL
162

FIG.21

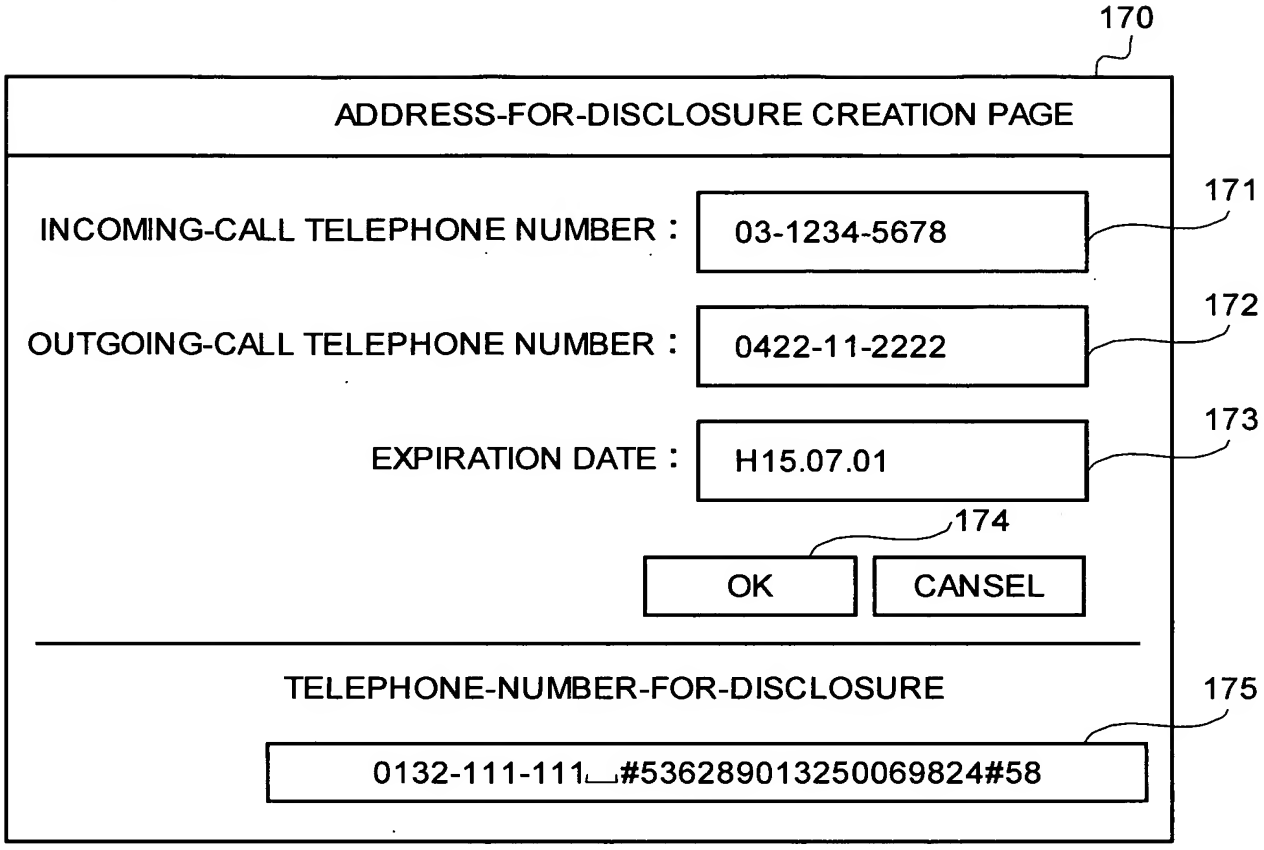
170
ADDRESS-FOR-DISCLOSURE CREATION PAGE
INCOMING-CALL TELEPHONE NUMBER :
03-1234-5678
171
OUTGOING-CALL TELEPHONE NUMBER :
0422-11-2222
172
EXPIRATION DATE :
H15.07.01
173
174
OK
CANSEL
TELEPHONE-NUMBER-FOR-DISCLOSURE
175
0132-111-111␣#536289013250069824#58

FIG.22

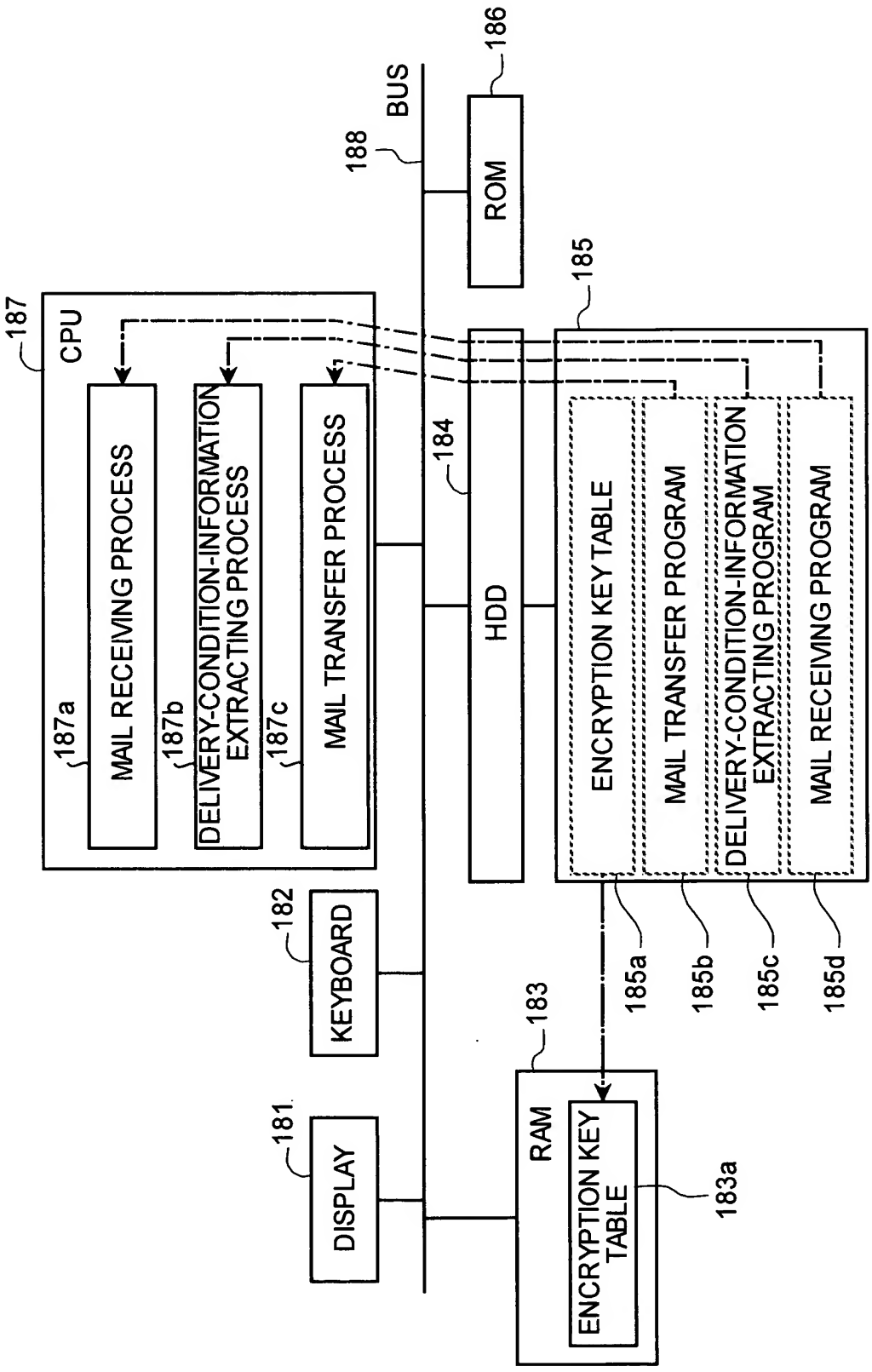
186
ROM
188
BUS
185
187
CPU
MAIL RECEIVING PROCESS
DELIVERY-CONDITION-INFORMATION EXTRACTING PROCESS
MAIL TRANSFER PROCESS
187a
187b
187c
184
HDD
ENCRYPTION KEY TABLE
MAIL TRANSFER PROGRAM
DELIVERY-CONDITION-INFORMATION EXTRACTING PROGRAM
MAIL RECEIVING PROGRAM
182
KEYBOARD
183
185a
185b
185c
185d
181
DISPLAY
RAM
ENCRYPTION KEY TABLE
183a

FIG.23

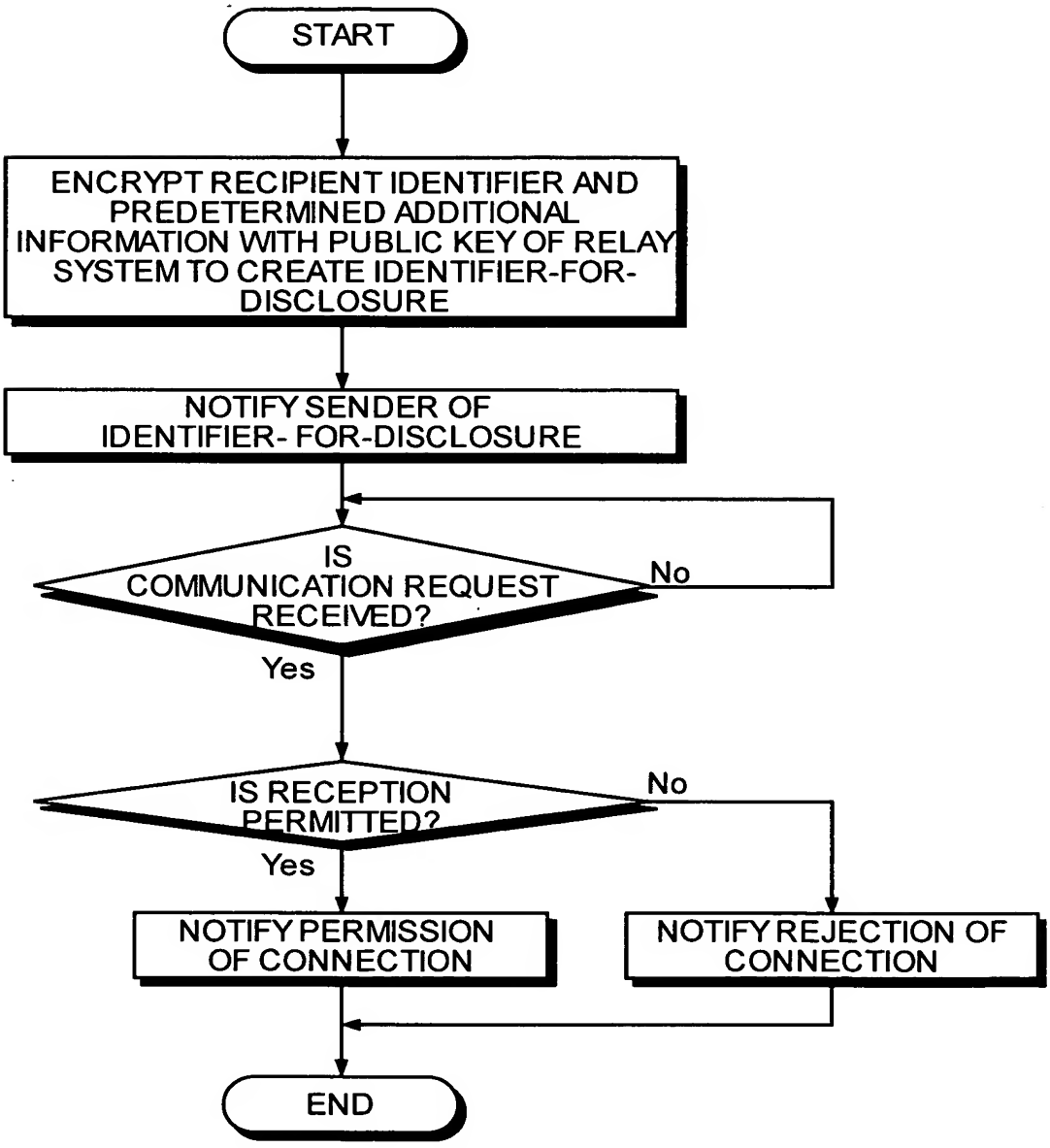
START
ENCRYPT RECIPIENT IDENTIFIER AND PREDETERMINED ADDITIONAL INFORMATION WITH PUBLIC KEY OF RELAY SYSTEM TO CREATE IDENTIFIER-FOR-DISCLOSURE
NOTIFY SENDER OF IDENTIFIER- FOR-DISCLOSURE
IS COMMUNICATION REQUEST RECEIVED?
No
Yes
IS RECEPTION PERMITTED?
No
Yes
NOTIFY PERMISSION OF CONNECTION
NOTIFY REJECTION OF CONNECTION
END

FIG.24

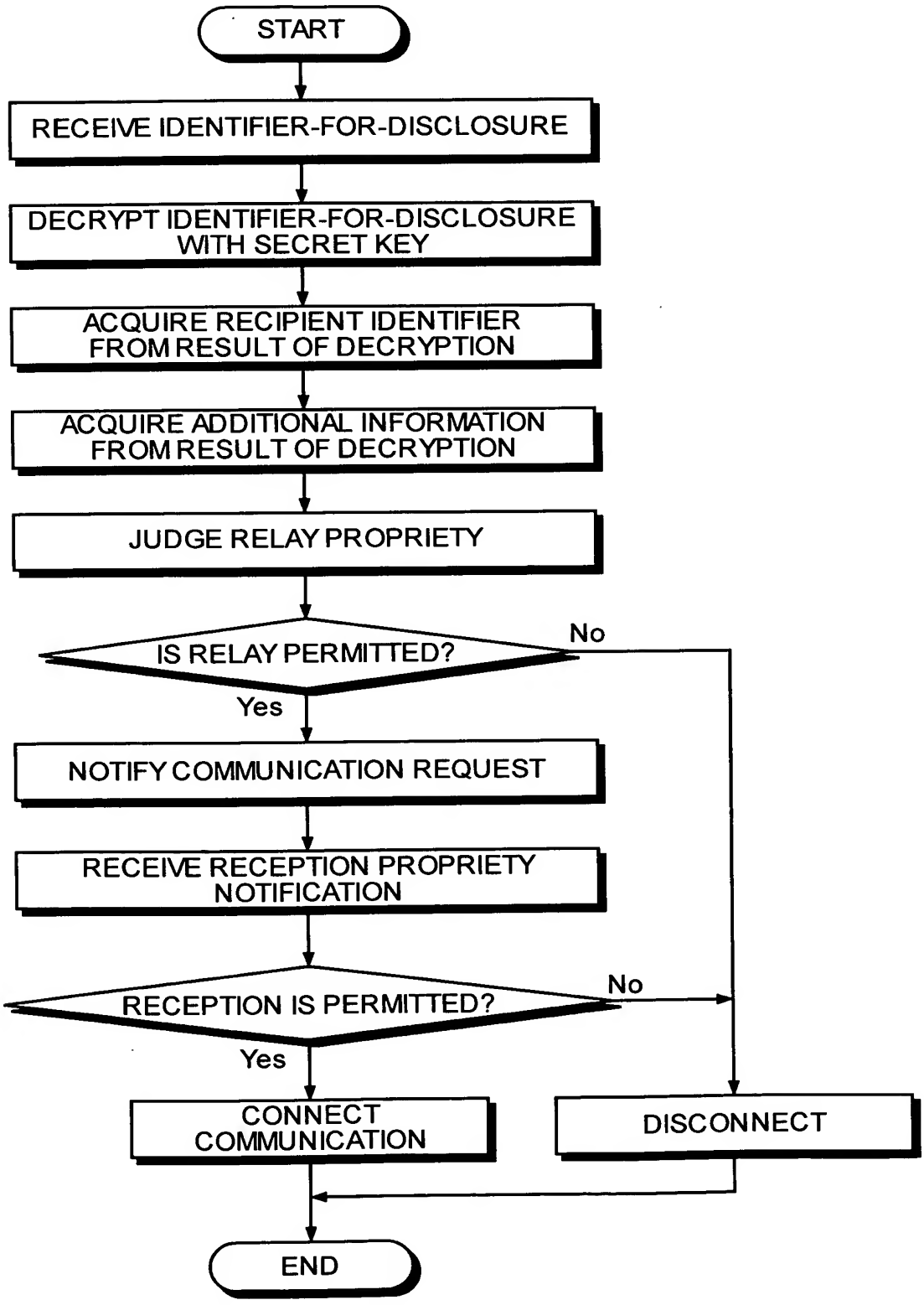
START
RECEIVE IDENTIFIER-FOR-DISCLOSURE
DECRYPT IDENTIFIER-FOR-DISCLOSURE WITH SECRET KEY
ACQUIRE RECIPIENT IDENTIFIER FROM RESULT OF DECRYPTION
ACQUIRE ADDITIONAL INFORMATION FROM RESULT OF DECRYPTION
JUDGE RELAY PROPRIETY
IS RELAY PERMITTED?
No
Yes
NOTIFY COMMUNICATION REQUEST
RECEIVE RECEPTION PROPRIETY NOTIFICATION
RECEPTION IS PERMITTED?
No
Yes
CONNECT COMMUNICATION
DISCONNECT
END

FIG.25

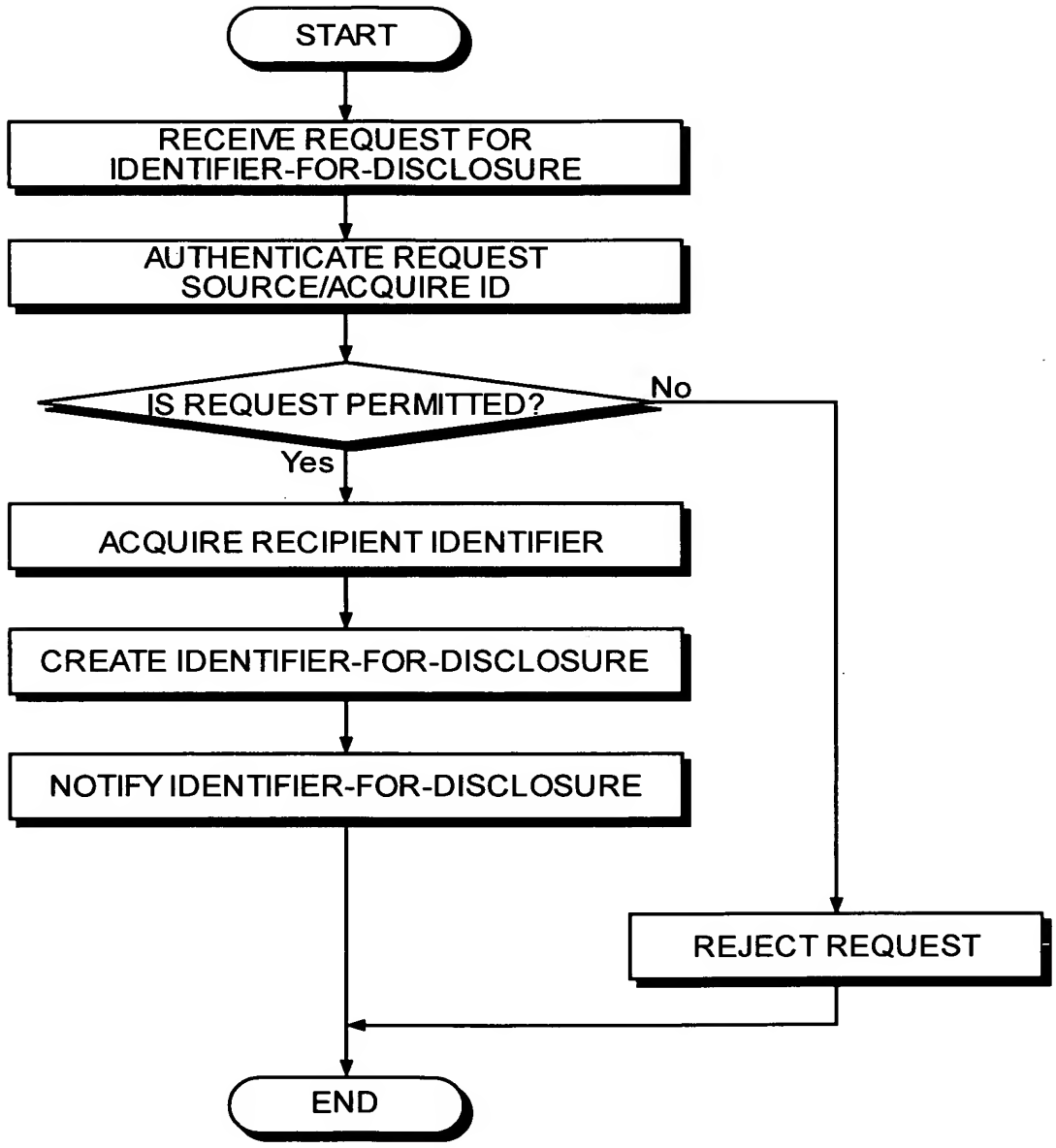
START
RECEIVE REQUEST FOR IDENTIFIER-FOR-DISCLOSURE
AUTHENTICATE REQUEST SOURCE/ACQUIRE ID
IS REQUEST PERMITTED?
No
Yes
ACQUIRE RECIPIENT IDENTIFIER
CREATE IDENTIFIER-FOR-DISCLOSURE
NOTIFY IDENTIFIER-FOR-DISCLOSURE
REJECT REQUEST
END

FIG.26

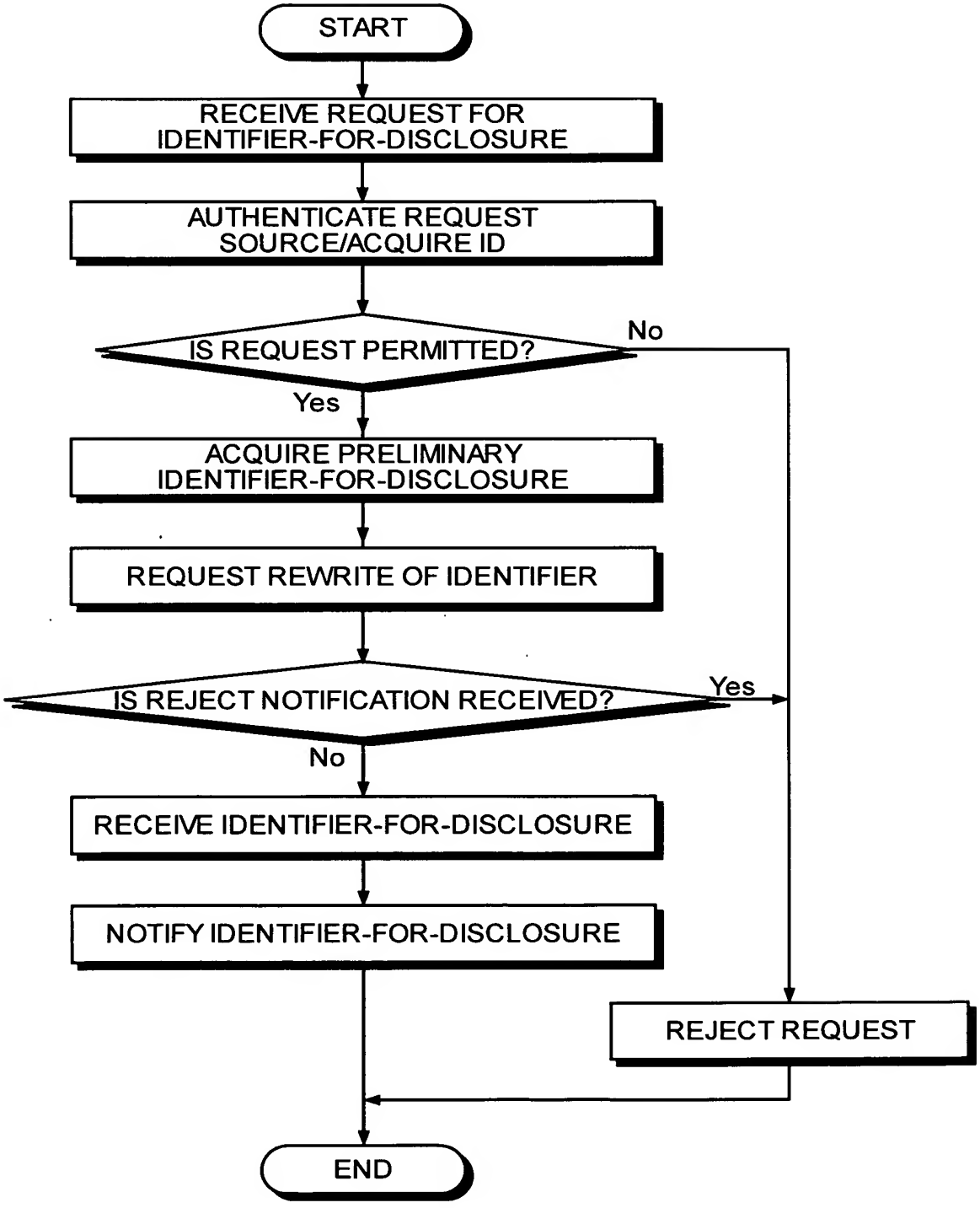
START
RECEIVE REQUEST FOR IDENTIFIER-FOR-DISCLOSURE
AUTHENTICATE REQUEST SOURCE/ACQUIRE ID
IS REQUEST PERMITTED?
No
Yes
ACQUIRE PRELIMINARY IDENTIFIER-FOR-DISCLOSURE
REQUEST REWRITE OF IDENTIFIER
IS REJECT NOTIFICATION RECEIVED?
Yes
No
RECEIVE IDENTIFIER-FOR-DISCLOSURE
NOTIFY IDENTIFIER-FOR-DISCLOSURE
REJECT REQUEST
END

FIG.27

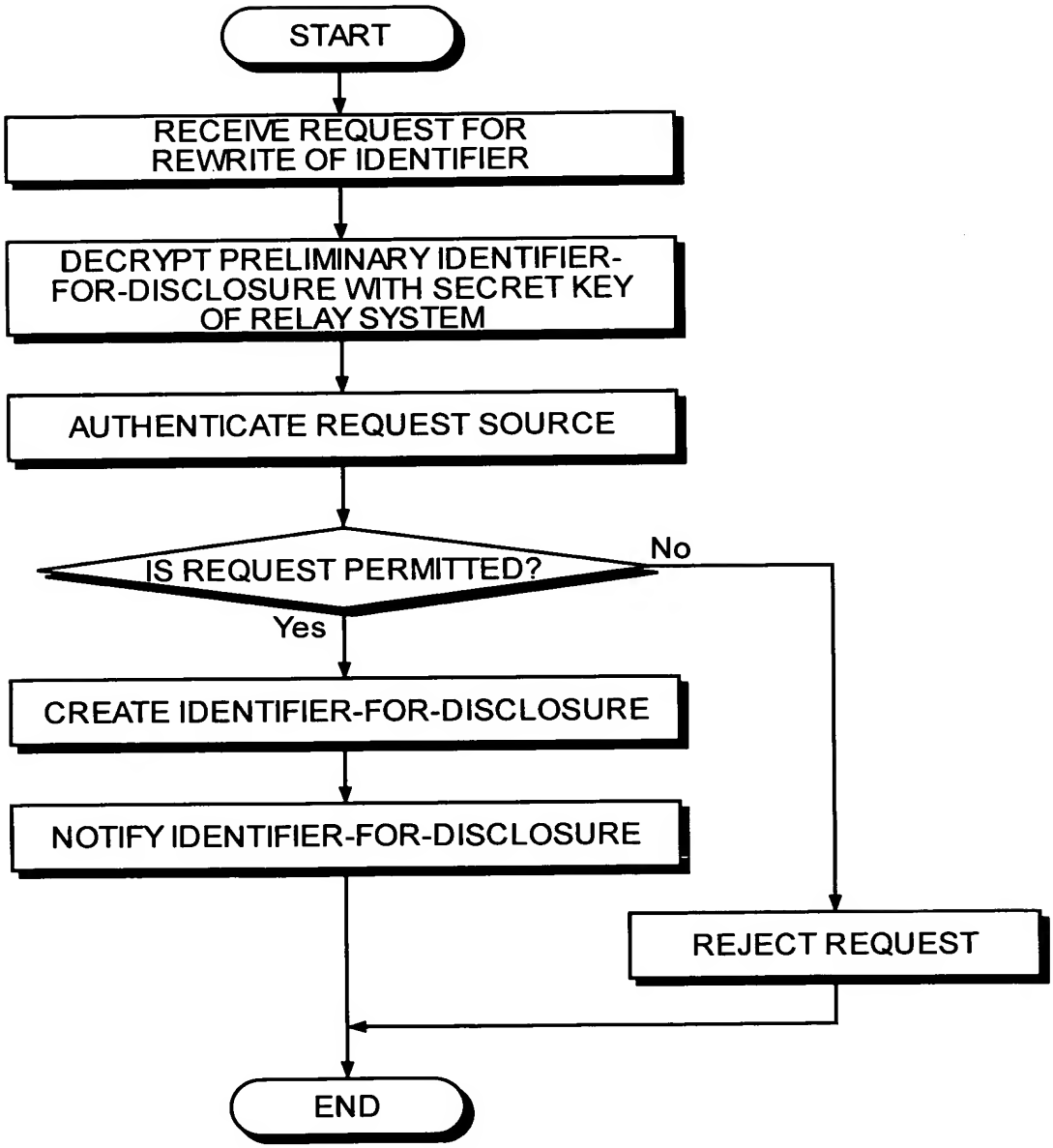
START
RECEIVE REQUEST FOR REWRITE OF IDENTIFIER
DECRYPT PRELIMINARY IDENTIFIER-FOR-DISCLOSURE WITH SECRET KEY OF RELAY SYSTEM
AUTHENTICATE REQUEST SOURCE
IS REQUEST PERMITTED?
No
Yes
CREATE IDENTIFIER-FOR-DISCLOSURE
NOTIFY IDENTIFIER-FOR-DISCLOSURE
REJECT REQUEST
END

FIG.28

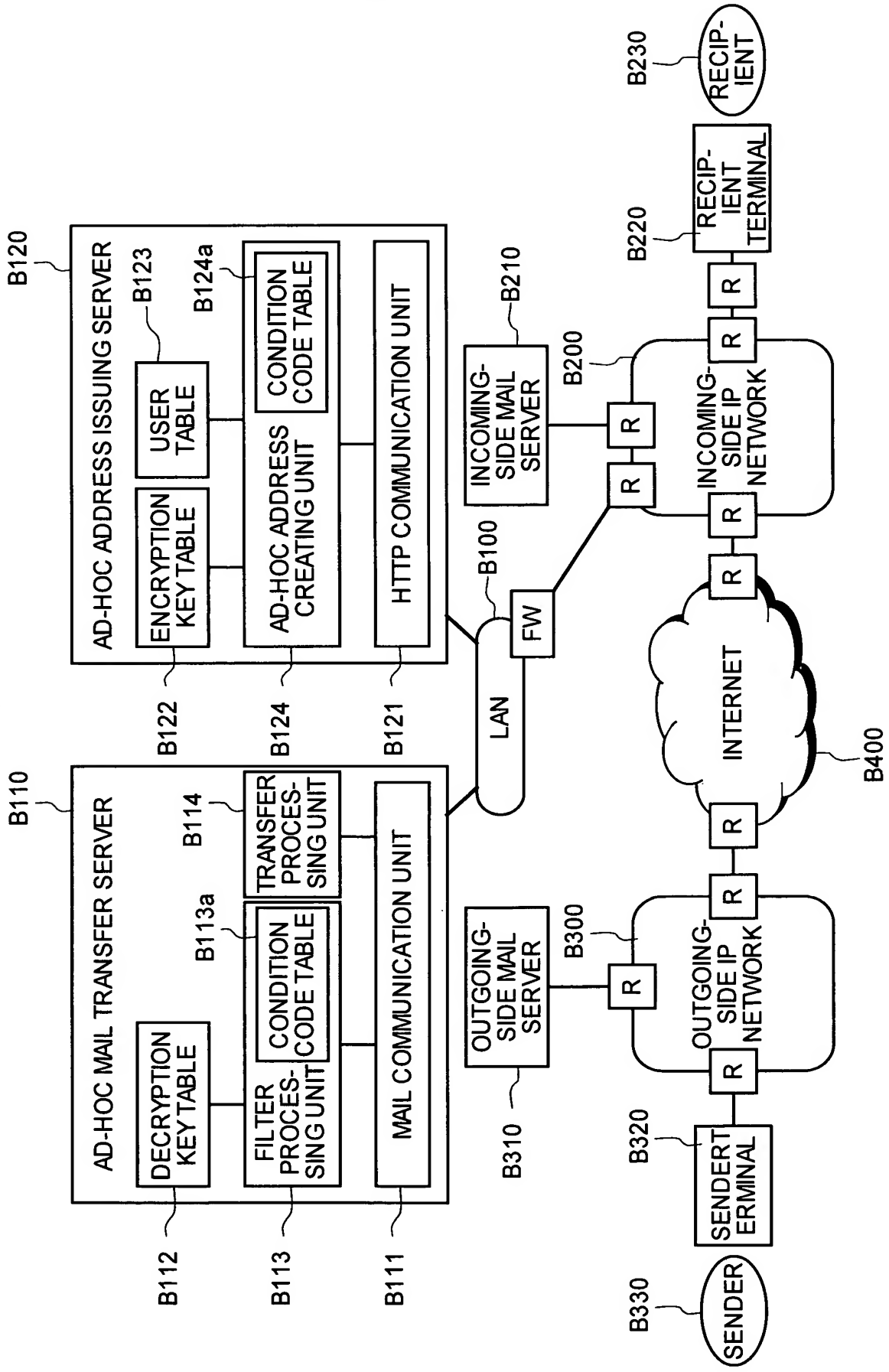
B120
AD-HOC ADDRESS ISSUING SERVER
B123
USER TABLE
B124a
CONDITION CODE TABLE
ENCRYPTION KEY TABLE
AD-HOC ADDRESS CREATING UNIT
HTTP COMMUNICATION UNIT
B122
B124
B121
B110
AD-HOC MAIL TRANSFER SERVER
B114
TRANSFER PROCES-SING UNIT
B113a
CONDITION CODE TABLE
DECRYPTION KEY TABLE
FILTER PROCES-SING UNIT
MAIL COMMUNICATION UNIT
B112
B113
B111
LAN
B100
FW
B210
INCOMING-SIDE MAIL SERVER
B200
R
INCOMING-SIDE IP NETWORK
B220
RECIP-IENT TERMINAL
B230
RECIP-IENT
INTERNET
B400
B300
OUTGOING-SIDE MAIL SERVER
OUTGOING-SIDE IP NETWORK
B310
B320
SENDERT ERMINAL
B330
SENDER

FIG.29

ENCRYPTION KEY TABLE
B112

KEY ID(ID_K)	KEY(K)
17	0x34d2a36b
18	0xe48ab21f
19	0xab46fc9a
20	0xe6a3b13b
...	

FIG.30

USER TABLE
B123

USER NAME	PASSWORD
...	
suzuki	ef34szq5s
tanaka	ew4902sa
...	
yamada	wf4wsfa3s

FIG.31

CONDITION CODE TABLE
B124a

COMBINATION PATTERN	COMBINATION CODE
S	0000
D	0001
E	0010
F	0011
SE	0100
DE	0101
DF	0110
DEF	0111

FIG.32

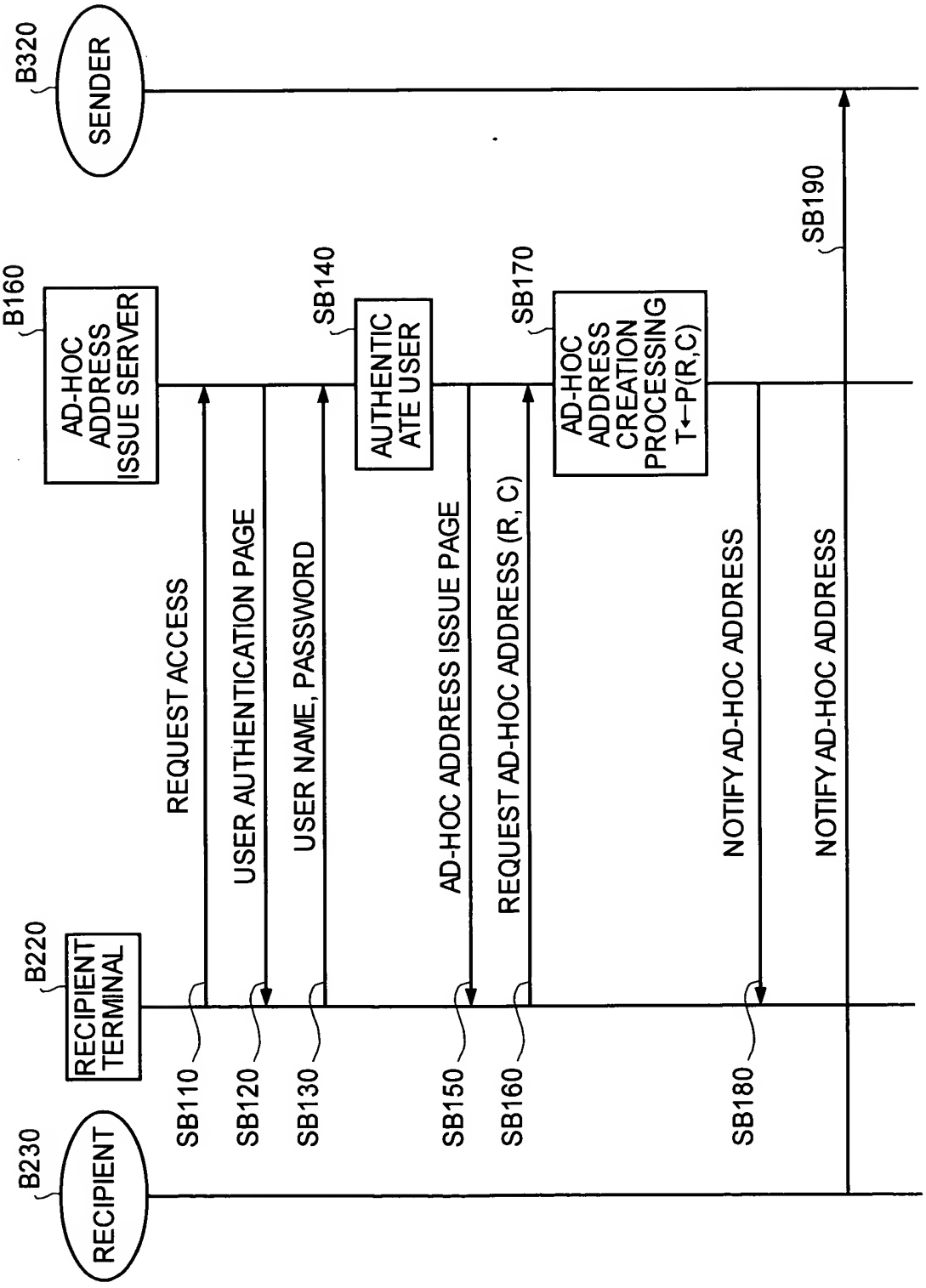
B320
SENDER
B160
AD-HOC ADDRESS ISSUE SERVER
SB140
AUTHENTIC ATE USER
SB170
AD-HOC ADDRESS CREATION PROCESSING T←P(R,C)
SB190
B220
RECIPIENT TERMINAL
B230
RECIPIENT
REQUEST ACCESS
USER AUTHENTICATION PAGE
USER NAME, PASSWORD
AD-HOC ADDRESS ISSUE PAGE
REQUEST AD-HOC ADDRESS (R, C)
NOTIFY AD-HOC ADDRESS
NOTIFY AD-HOC ADDRESS
SB110
SB120
SB130
SB150
SB160
SB180

FIG.33

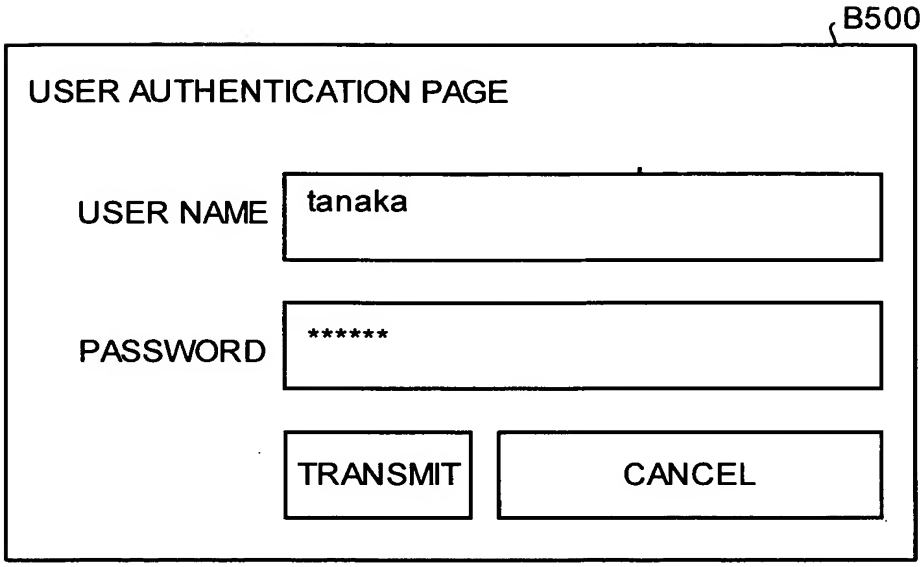
B500
USER AUTHENTICATION PAGE
USER NAME
tanaka
PASSWORD
******
TRANSMIT
CANCEL

FIG.34

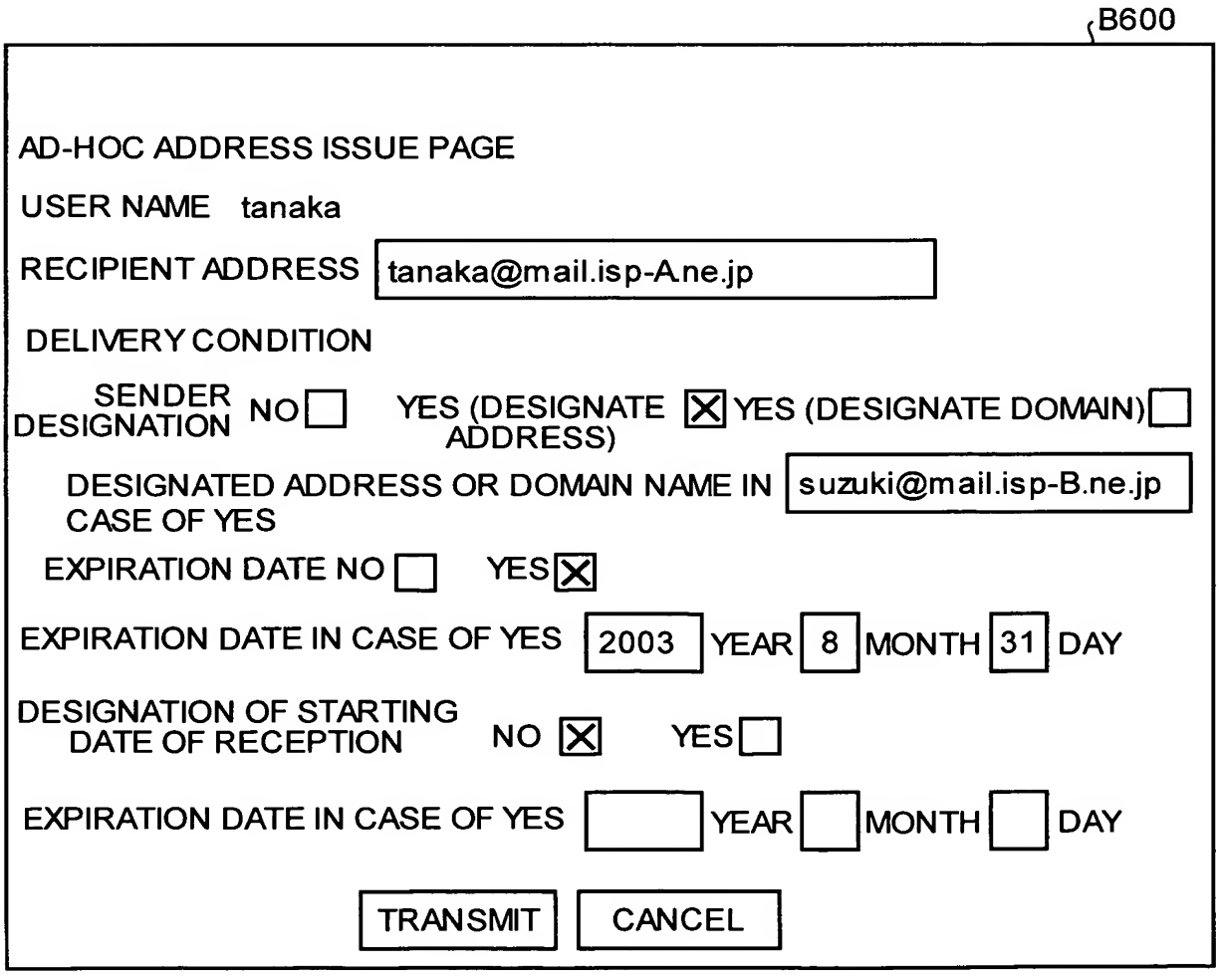
B600
AD-HOC ADDRESS ISSUE PAGE
USER NAME tanaka
RECIPIENT ADDRESS
tanaka@mail.isp-A.ne.jp
DELIVERY CONDITION
SENDER DESIGNATION
NO
YES (DESIGNATE ADDRESS)
YES (DESIGNATE DOMAIN)
DESIGNATED ADDRESS OR DOMAIN NAME IN CASE OF YES
suzuki@mail.isp-B.ne.jp
EXPIRATION DATE NO
YES
EXPIRATION DATE IN CASE OF YES
2003
YEAR
8
MONTH
31
DAY
DESIGNATION OF STARTING DATE OF RECEPTION
NO
YES
EXPIRATION DATE IN CASE OF YES
YEAR
MONTH
DAY
TRANSMIT
CANCEL

FIG.35

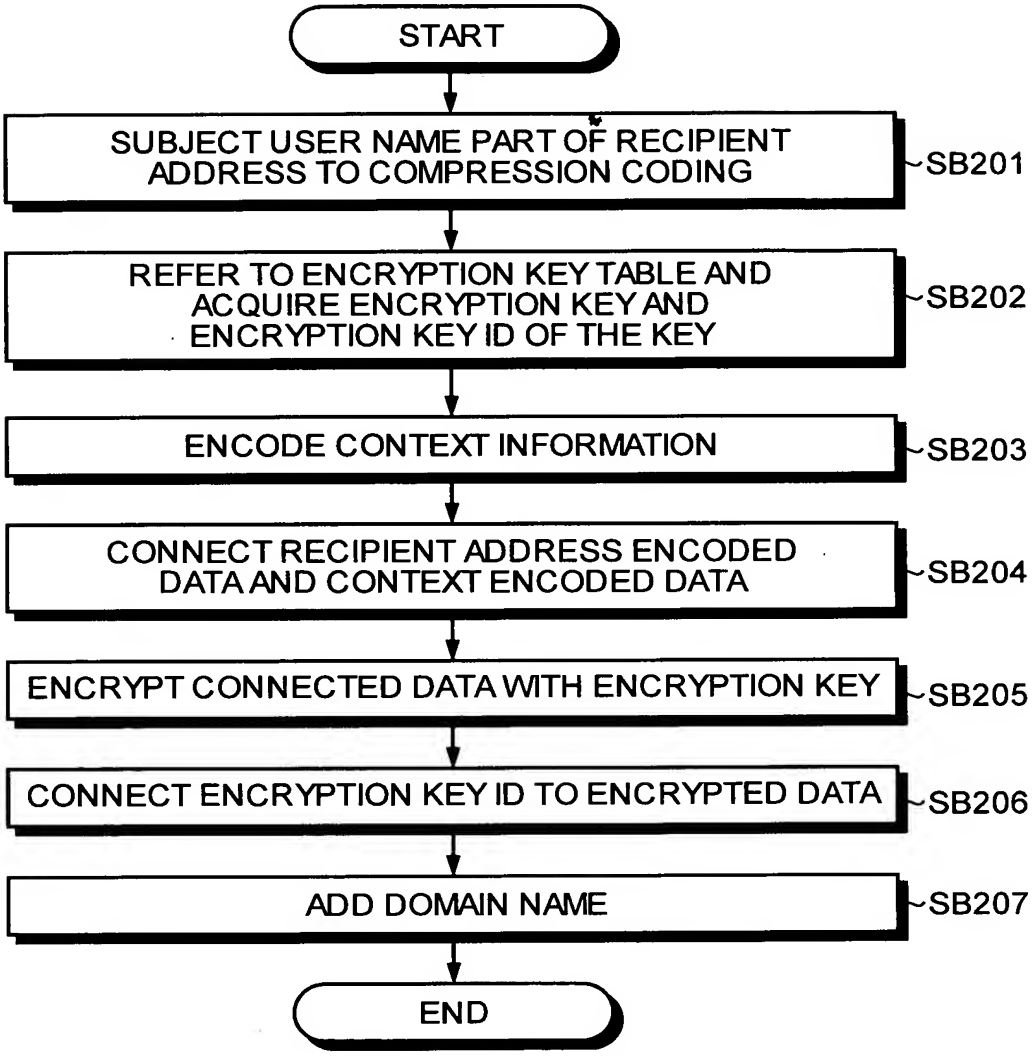
START
SUBJECT USER NAME PART OF RECIPIENT ADDRESS TO COMPRESSION CODING
SB201
REFER TO ENCRYPTION KEY TABLE AND ACQUIRE ENCRYPTION KEY AND ENCRYPTION KEY ID OF THE KEY
SB202
ENCODE CONTEXT INFORMATION
SB203
CONNECT RECIPIENT ADDRESS ENCODED DATA AND CONTEXT ENCODED DATA
SB204
ENCRYPT CONNECTED DATA WITH ENCRYPTION KEY
SB205
CONNECT ENCRYPTION KEY ID TO ENCRYPTED DATA
SB206
ADD DOMAIN NAME
SB207
END

FIG.36

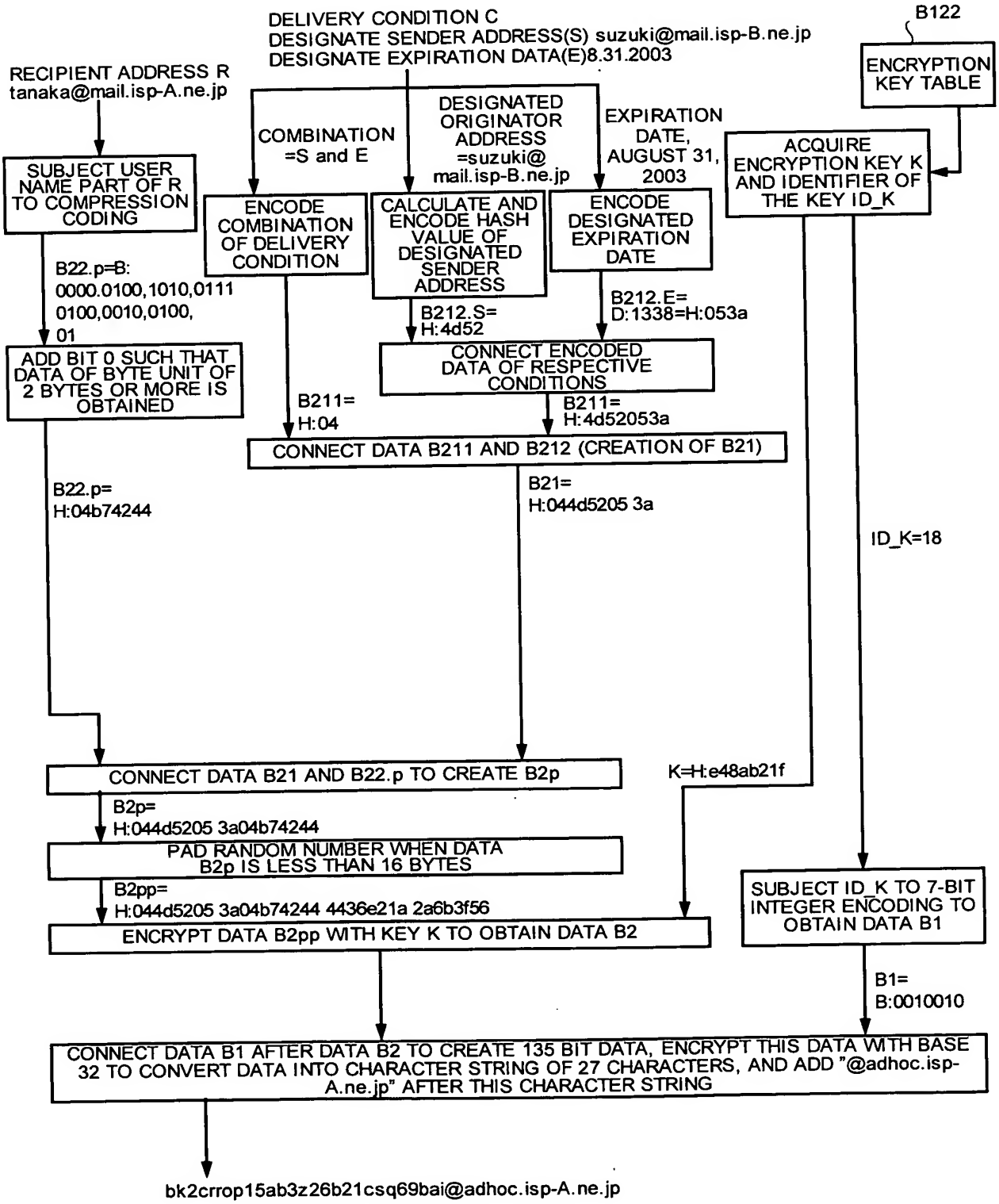
DELIVERY CONDITION C
DESIGNATE SENDER ADDRESS(S) suzuki@mail.isp-B.ne.jp
DESIGNATE EXPIRATION DATA(E)8.31.2003
B122
ENCRYPTION KEY TABLE
RECIPIENT ADDRESS R
tanaka@mail.isp-A.ne.jp
COMBINATION =S and E
DESIGNATED ORIGINATOR ADDRESS =suzuki@ mail.isp-B.ne.jp
EXPIRATION DATE, AUGUST 31, 2003
ACQUIRE ENCRYPTION KEY K AND IDENTIFIER OF THE KEY ID_K
SUBJECT USER NAME PART OF R TO COMPRESSION CODING
ENCODE COMBINATION OF DELIVERY CONDITION
CALCULATE AND ENCODE HASH VALUE OF DESIGNATED SENDER ADDRESS
ENCODE DESIGNATED EXPIRATION DATE
B22.p=B: 0000.0100,1010,0111 0100,0010,0100, 01
B212.S= H:4d52
B212.E= D:1338=H:053a
ADD BIT 0 SUCH THAT DATA OF BYTE UNIT OF 2 BYTES OR MORE IS OBTAINED
CONNECT ENCODED DATA OF RESPECTIVE CONDITIONS
B211= H:04
B211= H:4d52053a
CONNECT DATA B211 AND B212 (CREATION OF B21)
B22.p= H:04b74244
B21= H:044d5205 3a
ID_K=18
CONNECT DATA B21 AND B22.p TO CREATE B2p
K=H:e48ab21f
B2p= H:044d5205 3a04b74244
PAD RANDOM NUMBER WHEN DATA B2p IS LESS THAN 16 BYTES
SUBJECT ID_K TO 7-BIT INTEGER ENCODING TO OBTAIN DATA B1
B2pp= H:044d5205 3a04b74244 4436e21a 2a6b3f56
ENCRYPT DATA B2pp WITH KEY K TO OBTAIN DATA B2
B1= B:0010010
CONNECT DATA B1 AFTER DATA B2 TO CREATE 135 BIT DATA, ENCRYPT THIS DATA WITH BASE 32 TO CONVERT DATA INTO CHARACTER STRING OF 27 CHARACTERS, AND ADD "@adhoc.isp-A.ne.jp" AFTER THIS CHARACTER STRING
bk2crrop15ab3z26b21csq69bai@adhoc.isp-A.ne.jp

FIG.37

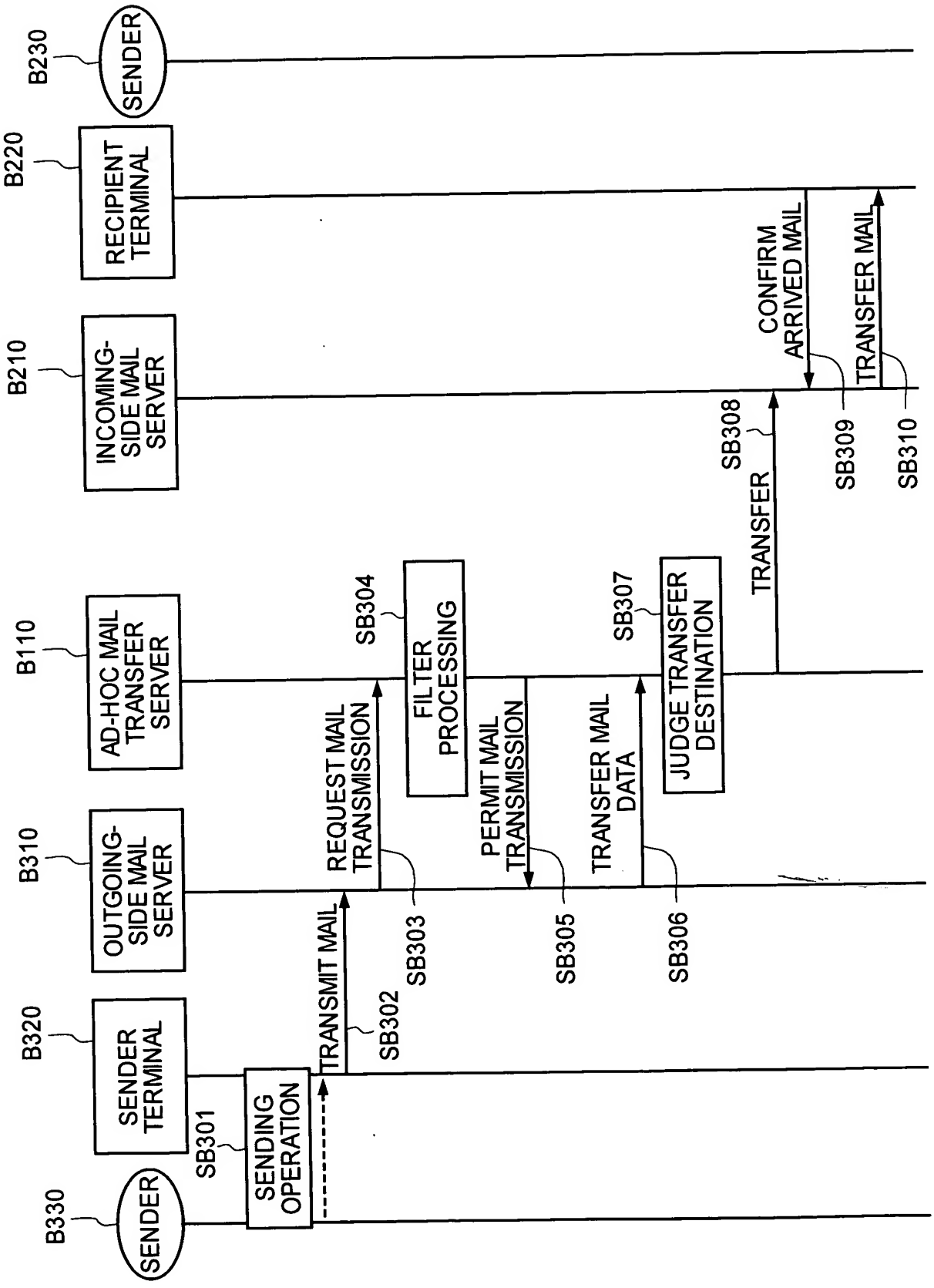
B330
SENDER
B320
SENDER TERMINAL
B310
OUTGOING-SIDE MAIL SERVER
B110
AD-HOC MAIL TRANSFER SERVER
B210
INCOMING-SIDE MAIL SERVER
B220
RECIPIENT TERMINAL
B230
SENDER
SB301
SENDING OPERATION
TRANSMIT MAIL
SB302
REQUEST MAIL TRANSMISSION
SB303
SB304
FILTER PROCESSING
PERMIT MAIL TRANSMISSION
SB305
TRANSFER MAIL DATA
SB306
SB307
JUDGE TRANSFER DESTINATION
TRANSFER
SB308
CONFIRM ARRIVED MAIL
SB309
TRANSFER MAIL
SB310

FIG.38

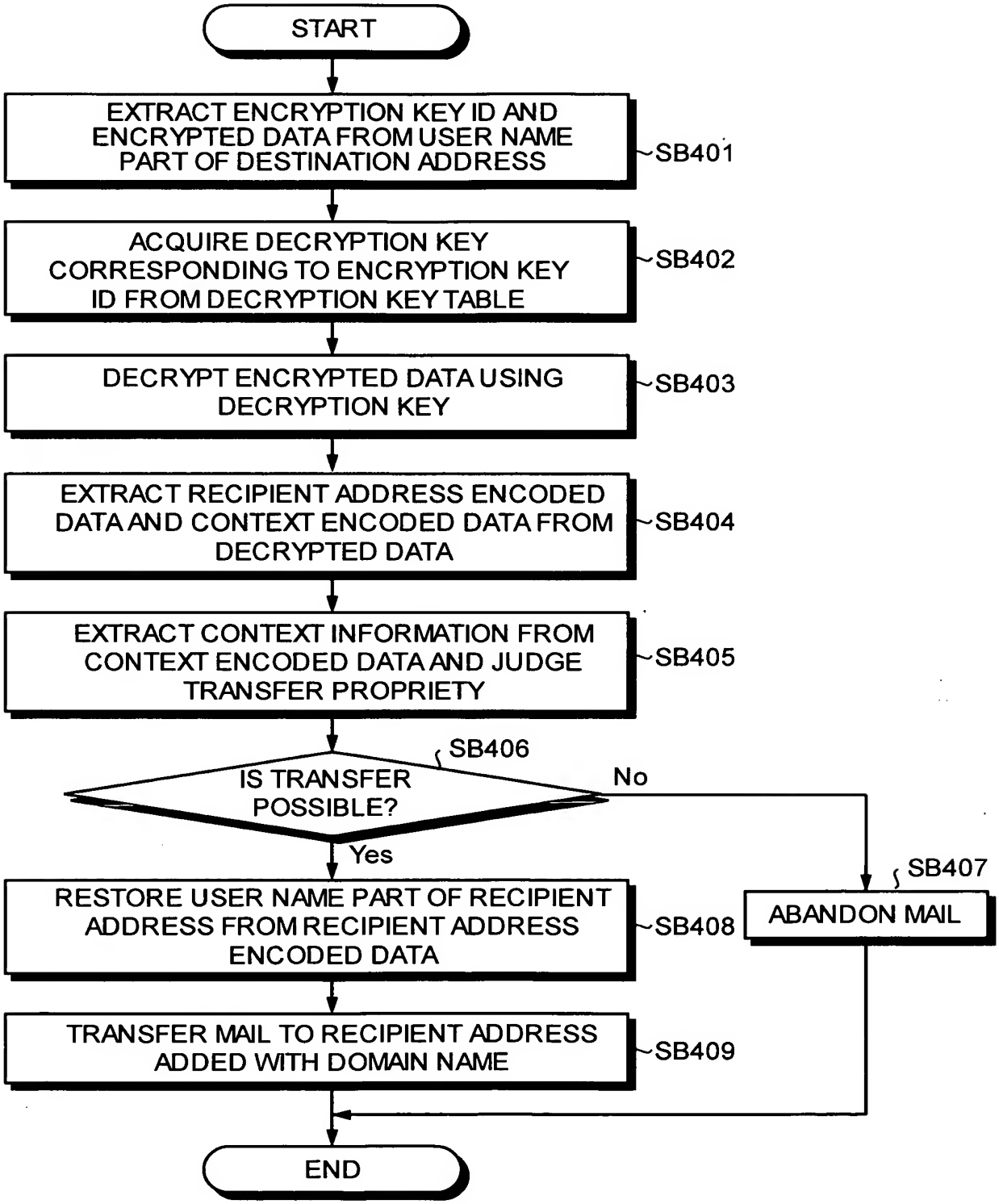
START
EXTRACT ENCRYPTION KEY ID AND ENCRYPTED DATA FROM USER NAME PART OF DESTINATION ADDRESS
SB401
ACQUIRE DECRYPTION KEY CORRESPONDING TO ENCRYPTION KEY ID FROM DECRYPTION KEY TABLE
SB402
DECRYPT ENCRYPTED DATA USING DECRYPTION KEY
SB403
EXTRACT RECIPIENT ADDRESS ENCODED DATA AND CONTEXT ENCODED DATA FROM DECRYPTED DATA
SB404
EXTRACT CONTEXT INFORMATION FROM CONTEXT ENCODED DATA AND JUDGE TRANSFER PROPRIETY
SB405
SB406
IS TRANSFER POSSIBLE?
No
Yes
SB407
ABANDON MAIL
RESTORE USER NAME PART OF RECIPIENT ADDRESS FROM RECIPIENT ADDRESS ENCODED DATA
SB408
TRANSFER MAIL TO RECIPIENT ADDRESS ADDED WITH DOMAIN NAME
SB409
END

FIG.39

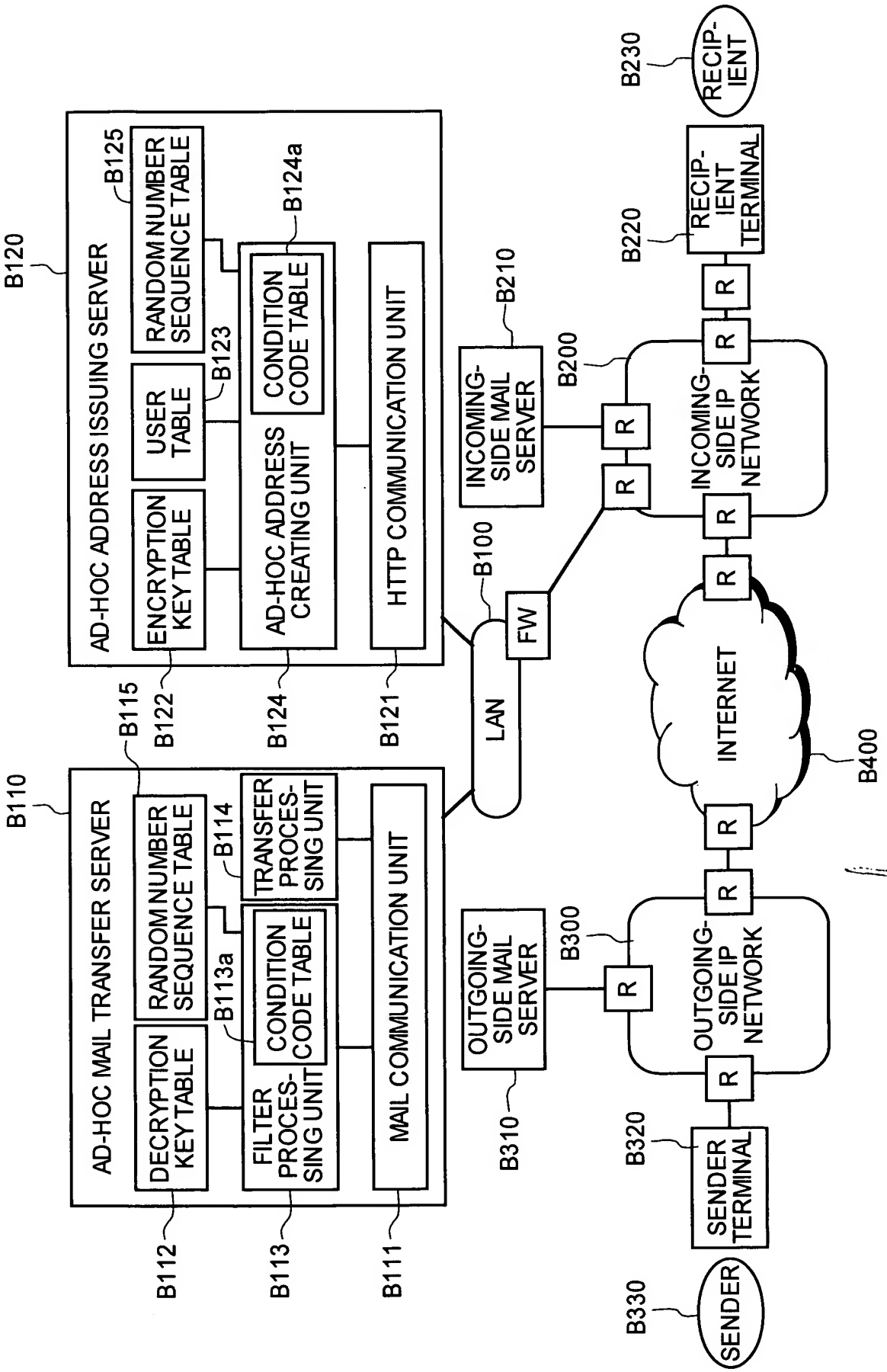
B120
AD-HOC ADDRESS ISSUING SERVER
B125
RANDOM NUMBER SEQUENCE TABLE
B123
USER TABLE
B124a
CONDITION CODE TABLE
ENCRYPTION KEY TABLE
AD-HOC ADDRESS CREATING UNIT
HTTP COMMUNICATION UNIT
B122
B124
B121
B115
B110
AD-HOC MAIL TRANSFER SERVER
RANDOM NUMBER SEQUENCE TABLE
B114
TRANSFER PROCES-SING UNIT
B113a
DECRYPTION KEY TABLE
CONDITION CODE TABLE
FILTER PROCES-SING UNIT
MAIL COMMUNICATION UNIT
B112
B113
B111
LAN
B100
FW
B210
INCOMING-SIDE MAIL SERVER
B200
R
INCOMING-SIDE IP NETWORK
B220
RECIP-IENT TERMINAL
B230
RECIP-IENT
INTERNET
B400
B300
OUTGOING-SIDE MAIL SERVER
OUTGOING-SIDE IP NETWORK
B310
B320
SENDER TERMINAL
B330
SENDER

FIG.40

RANDOM NUMBER SEQUENCE TABLE
B125

INDEX	RANDOM NUMBER SEQUENCE
0	0101,0100,1010,1110
1	0111,0101,0100,0101
2	0011,0110,1010,1011
...	

FIG.41

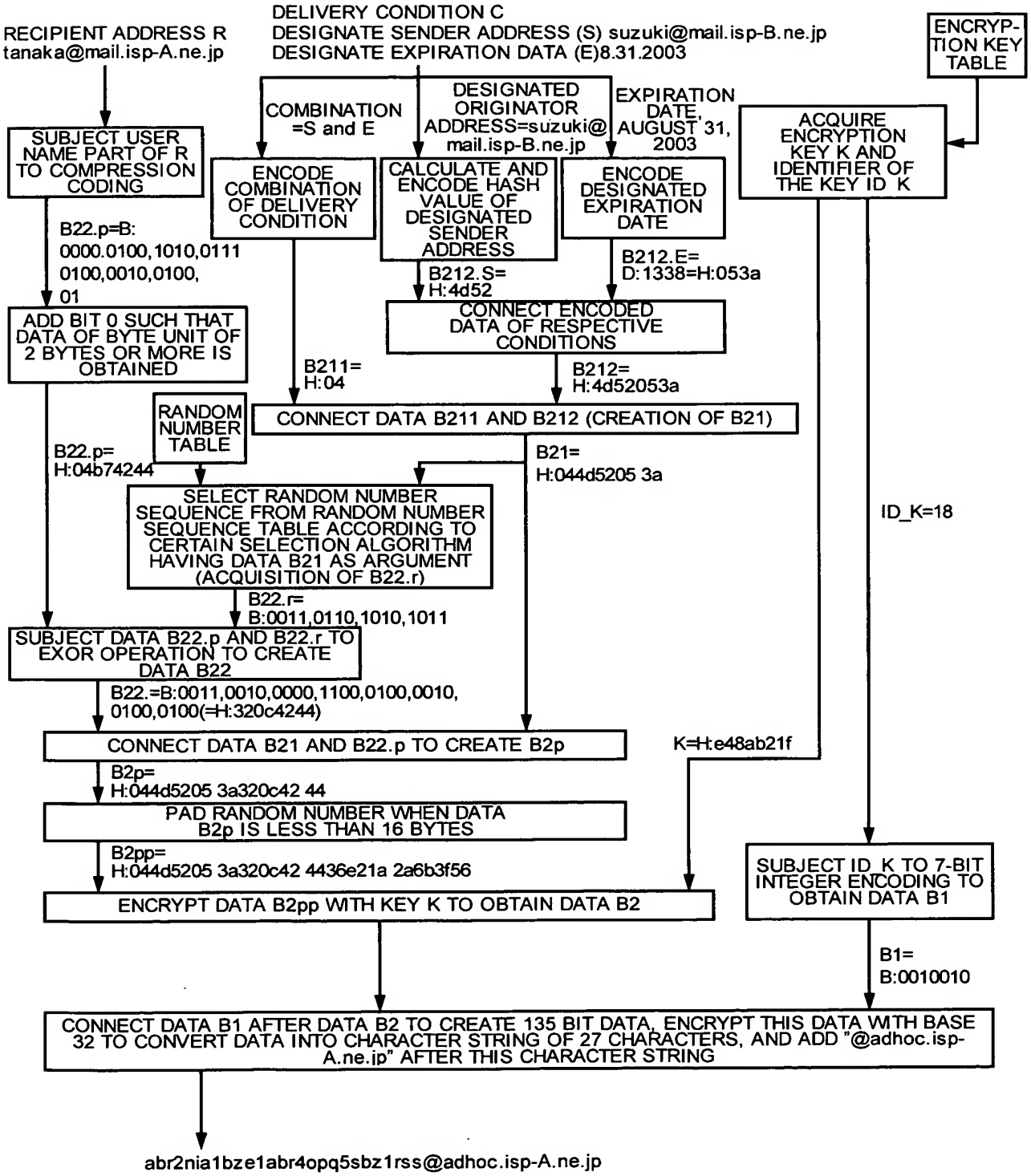
RECIPIENT ADDRESS R
tanaka@mail.isp-A.ne.jp
DELIVERY CONDITION C
DESIGNATE SENDER ADDRESS (S) suzuki@mail.isp-B.ne.jp
DESIGNATE EXPIRATION DATA (E)8.31.2003
ENCRYP-TION KEY TABLE
COMBINATION =S and E
DESIGNATED ORIGINATOR ADDRESS=suzuki@mail.isp-B.ne.jp
EXPIRATION DATE, AUGUST 31, 2003
SUBJECT USER NAME PART OF R TO COMPRESSION CODING
ENCODE COMBINATION OF DELIVERY CONDITION
CALCULATE AND ENCODE HASH VALUE OF DESIGNATED SENDER ADDRESS
ENCODE DESIGNATED EXPIRATION DATE
ACQUIRE ENCRYPTION KEY K AND IDENTIFIER OF THE KEY ID_K
B22.p=B:
0000.0100,1010,0111
0100,0010,0100,
01
B212.S=
H:4d52
B212.E=
D:1338=H:053a
ADD BIT 0 SUCH THAT DATA OF BYTE UNIT OF 2 BYTES OR MORE IS OBTAINED
CONNECT ENCODED DATA OF RESPECTIVE CONDITIONS
B211=
H:04
B212=
H:4d52053a
RANDOM NUMBER TABLE
CONNECT DATA B211 AND B212 (CREATION OF B21)
B22.p=
H:04b74244
B21=
H:044d5205 3a
ID_K=18
SELECT RANDOM NUMBER SEQUENCE FROM RANDOM NUMBER SEQUENCE TABLE ACCORDING TO CERTAIN SELECTION ALGORITHM HAVING DATA B21 AS ARGUMENT (ACQUISITION OF B22.r)
B22.r=
B:0011,0110,1010,1011
SUBJECT DATA B22.p AND B22.r TO EXOR OPERATION TO CREATE DATA B22
B22.=B:0011,0010,0000,1100,0100,0010,
0100,0100(=H:320c4244)
CONNECT DATA B21 AND B22.p TO CREATE B2p
K=H:e48ab21f
B2p=
H:044d5205 3a320c42 44
PAD RANDOM NUMBER WHEN DATA B2p IS LESS THAN 16 BYTES
B2pp=
H:044d5205 3a320c42 4436e21a 2a6b3f56
SUBJECT ID_K TO 7-BIT INTEGER ENCODING TO OBTAIN DATA B1
ENCRYPT DATA B2pp WITH KEY K TO OBTAIN DATA B2
B1=
B:0010010
CONNECT DATA B1 AFTER DATA B2 TO CREATE 135 BIT DATA, ENCRYPT THIS DATA WITH BASE 32 TO CONVERT DATA INTO CHARACTER STRING OF 27 CHARACTERS, AND ADD "@adhoc.isp-A.ne.jp" AFTER THIS CHARACTER STRING
abr2nia1bze1abr4opq5sbz1rss@adhoc.isp-A.ne.jp

FIG.42

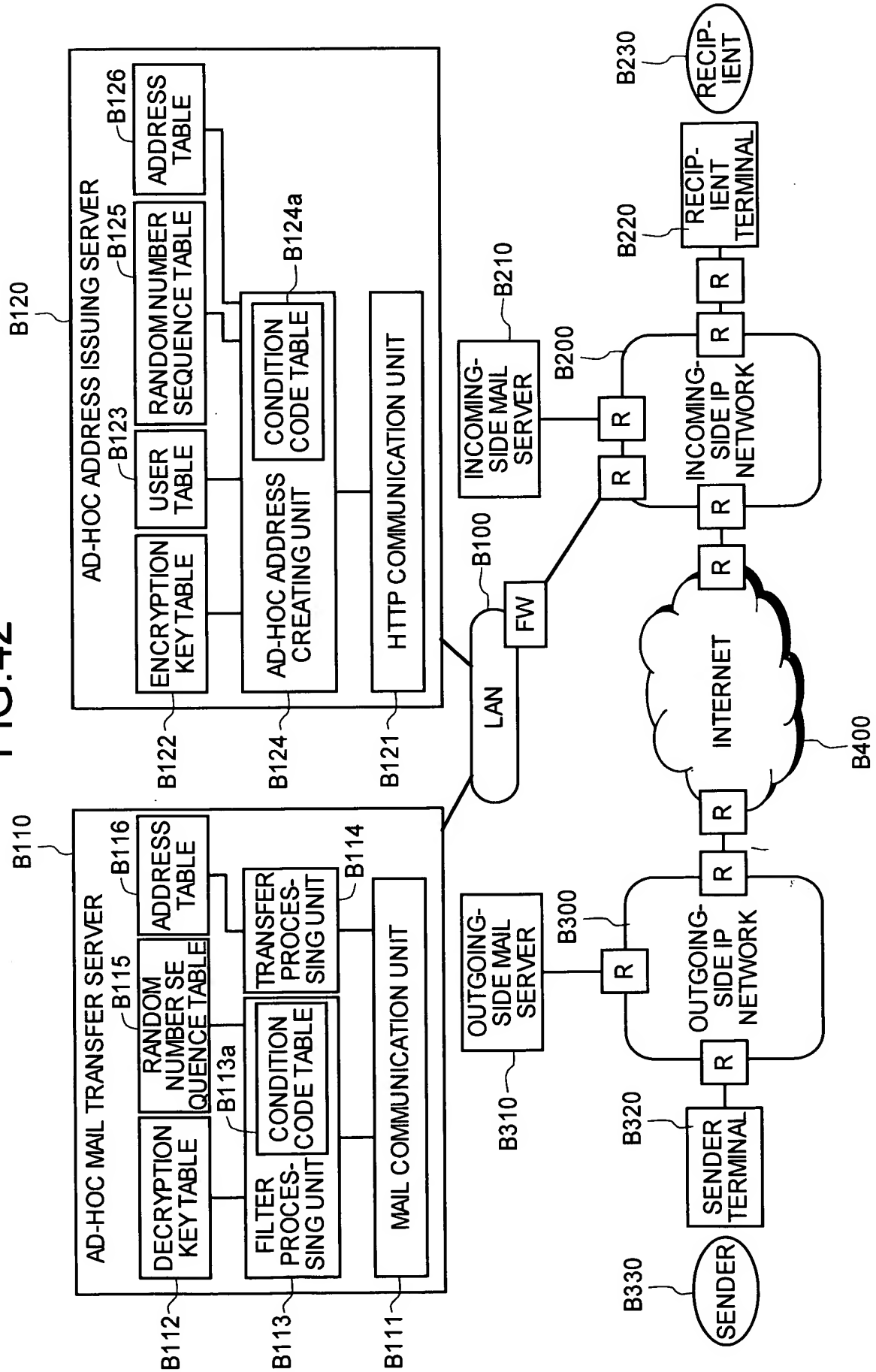
B120
AD-HOC ADDRESS ISSUING SERVER
B123
USER TABLE
B125
RANDOM NUMBER SEQUENCE TABLE
B126
ADDRESS TABLE
ENCRYPTION KEY TABLE
AD-HOC ADDRESS CREATING UNIT
B124a
CONDITION CODE TABLE
HTTP COMMUNICATION UNIT
B122
B124
B121
B110
AD-HOC MAIL TRANSFER SERVER
B116
ADDRESS TABLE
B115
RANDOM NUMBER SE QUENCE TABLE
B113a
CONDITION CODE TABLE
TRANSFER PROCES-SING UNIT
B114
DECRYPTION KEY TABLE
FILTER PROCES-SING UNIT
MAIL COMMUNICATION UNIT
B112
B113
B111
LAN
B100
FW
B210
INCOMING-SIDE MAIL SERVER
B200
R
INCOMING-SIDE IP NETWORK
B220
RECIP-IENT TERMINAL
B230
RECIP-IENT
INTERNET
B400
OUTGOING-SIDE MAIL SERVER
B300
OUTGOING-SIDE IP NETWORK
B310
B320
SENDER TERMINAL
B330
SENDER

FIG.43

ADDRESS TABLE
B126

AD-HOC MAIL USER ID	RECIPIENT ADDRESS
...	...
TN	tanap@oce.com
SZ	suzup@pla.com
...	...